# Filter Summary Report: TIA,some,parasitic,Z1,Z2,ZL

## Generated by MacAnalog-Symbolix

# December 5, 2024

## Contents

1	Exar	mined $H(z)$	for TIA so	me paras	sitic Z1 Z	Z2 ZL:	$\frac{Z_1 Z_2 g_m r_o}{Z_1 Z_2 g_m r_o}$	$Z_1 Z_L (Z_2 g_m) + Z_1 Z_2 + Z_1 r_0$	$\frac{r_o + Z_2 + r_o}{r_o + Z_2 Z_L + Z_0}$	$\frac{1}{Z_2 r_o + Z_L r}$	<u> </u>								30
2	HP																		30
3	<b>BP</b> 3.1	BP-1 $Z(s) =$	$(R_1, R_2, \infty)$	$\infty, \infty, \infty,$	$\frac{L_L s}{C_L L_L s^2 + 1}$	$_{\overline{1}}$ )						 	 <b>3</b> 0						
	3.2	BP-2 Z(s) =	$\left(R_1, R_2, \circ\right)$	$\infty$ , $\infty$ , $\infty$ ,	$\frac{1}{C_L s + \frac{1}{R_L}}$	$\frac{1}{+\frac{1}{L_r s}}$						 	 30						
	3.3	BP-3 $Z(s) =$	$(L_1s, R_2, C_3)$	$\infty$ , $\infty$ , $\infty$	$, \frac{1}{C_L s}$							 	 30						
	3.4	BP-4 Z(s) =	$(L_1s, R_2, C_3)$	$\infty$ , $\infty$ , $\infty$	$, \frac{R_L}{C_L R_L s + 1}$	$_{\overline{1}})$						 	 31						
	3.5	BP-5 $Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1},\right.$	$R_2, \infty, \circ$	$\infty$ , $\infty$ , $R_L$	L)						 	 31						
	3.6	BP-6 $Z(s) =$	$\left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L}}\right)$	$\frac{1}{1^s}$ , $R_2$ , $\infty$	$\infty$ , $\infty$ , $\infty$ ,	$R_L$ .						 	 31						
4	$\mathbf{LP}$		/			`													32
	4.1	LP-1 Z(s) = $LP-2 Z(s) =$	$\left(\frac{1}{C_1s}, R_2, c\right)$	$\infty$ , $\infty$ , $\infty$	$, \frac{R_L}{C_L R_L s + 1}$	$_{\overline{1}}) \dots$						 	 32						
	4.2	LP-2 Z(s) =	$\left(\frac{R_1}{C_1R_1s+1}, \right)$	$R_2, \infty, \infty$	$0,  \infty,  \frac{1}{C_L s}$	<del>,</del> )						 	 32						
	4.3	LP-3 Z(s) =	$\left(\frac{R_1}{C_1R_1s+1}, \right)$	$R_2, \infty, \infty$	$0,  \infty,  \frac{1}{C_L F}$	$\frac{R_L}{R_L s+1}$						 	 32						
5	$\mathbf{BS}$		/			. \													38
		BS-1 $Z(s) =$																	
	5.2	BS-2 $Z(s) =$	$\left(R_1, R_2, \infty\right)$	$\infty$ , $\infty$ , $\infty$ ,	$R_L \left(L_L s + L_L + $	$\left(\frac{1}{C_L s}\right) + \frac{1}{C_L s}$						 	 33						
	5.3	BS-3 $Z(s) =$	$\left(L_1s + \frac{1}{C_1s},\right.$	$R_2, \infty,$	$\infty$ , $\infty$ , $R$	$c_L$ )						 	 33						
	5.4	BS-4 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1}\right)}{L_1s + R_1 + \frac{1}{C_1}}\right)$	$\frac{\overline{s}}{\overline{l_1 s}}$ , $R_2$ , $\circ$	$\infty$ , $\infty$ , $\infty$ ,	$, R_L$						 	 34						
6	$\mathbf{GE}$		/				`												34
	6.1	GE-1 $Z(s) =$	$(R_1, R_2, \circ)$	$\infty$ , $\infty$ , $\infty$ ,	$L_L s + R$	$C_L + \frac{1}{C_L s}$	$_{i})$					 	 34						
		GE-2 $Z(s) =$																	
	6.3	GE-3 $Z(s) =$	$(R_1, L_2s +$	$\frac{1}{C_2s}$ , $\infty$ ,	$\infty$ , $\infty$ , $R$	$R_L\Big)$						 	 35						
		GE-4 Z(s) =																	
	6.5	GE-5 $Z(s) =$	$\left(R_1, \frac{L_2s}{C_2L_2s}\right)$	$\frac{8}{2+1} + R_2,$	$\infty$ , $\infty$ , o	$\infty$ , $R_L$						 	 36						
	6.6	GE-6 $Z(s) =$	$\left(R_1, \frac{R_2\left(L_2\right)}{L_2s+1}\right)$	$\frac{(2s + \frac{1}{C_2 s})}{R_2 + \frac{1}{C_2 s}},$	$\infty, \ \infty, \ \infty$	$R_L$						 	 3€						
	6.7	GE-7 $Z(s) =$	$(L_1s + R_1 -$	$+\frac{1}{C_1 s}, R_2$	$, \infty, \infty,$	$\infty, \stackrel{'}{R_L}$	)					 	 36						
		GE-8 $Z(s) =$	:																

## 7 AP **37** 8 INVALID-NUMER **37** 8.5 INVALID-NUMER-5 $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ . . . . . . . . . 9 INVALID-WZ 10 INVALID-ORDER

10.4 INVALID-ORDER-4 $Z(s) = \left(R_1, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
10.5 INVALID-ORDER-5 $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L\right)$
10.6 INVALID-ORDER-6 $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
10.7 INVALID-ORDER-7 $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
10.8 INVALID-ORDER-8 $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
10.9 INVALID-ORDER-9 $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
$10.10 \text{INVALID-ORDER-10 } Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) $
$10.11\text{INVALID-ORDER-11 } Z(s) = \left(R_1, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) $
$10.12 \text{INVALID-ORDER-} 12 \ Z(s) = \left(R_1, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ R_L\right) $
$10.13 \text{INVALID-ORDER-13 } Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) \dots \dots$
$10.14 \text{INVALID-ORDER-} 14 \ Z(s) = \left(R_1, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L \overline{L}_L s^2 + 1}\right) $
$10.15 \text{INVALID-ORDER-15 } Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) $
10.16INVALID-ORDER-16 $Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
$10.17 \text{INVALID-ORDER-17 } Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) $
10.18INVALID-ORDER-18 $Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 49
$10.19 \text{INVALID-ORDER-19 } Z(s) = \left(R_1, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L\right) $
$10.20 \text{INVALID-ORDER-20 } Z(s) = \left(R_1, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) $
$10.21 \text{INVALID-ORDER-21 } Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) \dots $
$10.22 \text{INVALID-ORDER-} 22 \ Z(s) = \left(R_1, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) $
10.23INVALID-ORDER-23 $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
$10.24 \text{INVALID-ORDER-} 24 \ Z(s) = \left(R_1, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) $
10.25INVALID-ORDER-25 $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
$10.26 \text{INVALID-ORDER-} 26 \ Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right) $
$10.26 \text{INVALID-ORDER-} 26 \ Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right) $ $10.27 \text{INVALID-ORDER-} 27 \ Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right) $ $50$
$10.28 \text{INVALID-ORDER-} 28 \ Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  $
$10.29 \text{INVALID-ORDER-} 29 \ Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) $
$10.30 \text{INVALID-ORDER-30 } Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)'  \dots $
$10.31 \text{INVALID-ORDER-31 } Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)  \dots $
10.32INVALID-ORDER-32 $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{L} + \frac{1}{L-1}}\right)$
$10.33 \text{INVALID-ORDER-} 33 \ Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) $
10.34INVALID-ORDER-34 $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
$10.35 \text{INVALID-ORDER-} 35 \ Z(s) = \left(R_1, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)   \qquad \qquad$
$10.35 \text{INVALID-ORDER-35 } Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right) $ $10.36 \text{INVALID-ORDER-36 } Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) $ $51$
10.37INVALID-ORDER-37 $Z(s) = \left(R_1, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$

$10.38 \text{INVALID-ORDER-38 } Z(s) = \left(R_1, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) \qquad . \qquad $	51
10.39INVALID-ORDER-39 $Z(s) = \left(R_1, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$	52
$10.40 \text{INVALID-ORDER-} 40 \ Z(s) = \left(R_1, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)  \dots $	52
10.41INVALID-ORDER-41 $Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$	52
$10.42 \text{INVALID-ORDER-} 42 \ Z(s) = \left(R_1, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)  \dots $	52
10.43INVALID-ORDER-43 $Z(s) = \left(R_1, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$	52
10.44INVALID-ORDER-44 $Z(s) = \left(R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, \frac{1}{C_Ls}\right)$	52
$10.45 \text{INVALID-ORDER-} 45 \ Z(s) = \left(R_1, \ \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right) $	52
10.46INVALID-ORDER-46 $Z(s) = \left(R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$	52
10.47INVALID-ORDER-47 $Z(s) = \left(R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$	53
10.48INVALID-ORDER-48 $Z(s) = \left(R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1}\right)$	53
10.49INVALID-ORDER-49 $Z(s) = \left(R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$	53
$10.50 \text{INVALID-ORDER-50 } Z(s) = \left( R_1, \ \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right) $	53
10.51INVALID-ORDER-51 $Z(s) = \left(R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$	53
$10.52 \text{INVALID-ORDER-52 } Z(s) = \left( R_1, \ \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right) $	53
10.53INVALID-ORDER-53 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{1}{C_Ls}\right)$	53
$10.54 \text{INVALID-ORDER-} 54 \ Z(s) = \left(R_1, \ \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right) \ \dots $	53
10.55INVALID-ORDER-55 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$	54
10.56INVALID-ORDER-56 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$ .	54
10.57INVALID-ORDER-57 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1}\right)'$	54
10.58INVALID-ORDER-58 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$ 10.59INVALID-ORDER-59 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$ 10.59INVALID-ORDER-59 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$	54
10.59INVALID-ORDER-59 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_2} + \frac{1}{L_2s}}\right)$	54
10 60INVALID ORDER 60 $Z(s) = \begin{pmatrix} R_s & \frac{R_2(L_2s + \overline{C_2s})}{C_2s} \end{pmatrix} \propto \infty \propto \frac{L_Ls}{L_Ls} + R_s$	54
10.60 INVALID-ORDER-61 $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$ 10.62 INVALID-ORDER-62 $Z(s) = (L_1s, R_2, \infty, \infty, \infty, R_L)$ 10.63 INVALID-ORDER-63 $Z(s) = \left(L_1s, R_2, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$ 10.64 ANNALID-ORDER AT $Z(s) = \left(L_1s, R_2, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$	54
$10.62 \text{INVALID-ORDER-} 62 \ Z(s) = (L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ R_L) $	54
$10.63 \text{INVALID-ORDER-} 63 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) $	55
$10.64 \text{INVALID-ORDER-} 64 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)  \dots $	55
$10.64 \text{INVALID-ORDER-} 64 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right) \dots $ $10.65 \text{INVALID-ORDER-} 65 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) \dots $	55
$10.66 \text{INVALID-ORDER-} 66 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_1 s + \frac{1}{4} + \frac{1}{4}}\right) \qquad \dots $	55
$10.67 \text{INVALID-ORDER-} 67 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) $	55
$10.67 \text{INVALID-ORDER-} 67 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ $10.68 \text{INVALID-ORDER-} 68 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ $10.68 \text{INVALID-ORDER-} 68 \ Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$	55
$10.69 \text{INVALID-ORDER-} 69 \ Z(s) = \left(L_1 s, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right) $	55

$10.70 \text{INVALID-ORDER-} 70 \ Z(s) = \left(L_1 s, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right) \ \dots $
10.71INVALID-ORDER-71 $Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
$10.72 \text{INVALID-ORDER-} 72 \ Z(s) = \left(L_1 s, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) \ \dots $
$10.73 \text{INVALID-ORDER-73 } Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) $
$10.74 \text{INVALID-ORDER-} 74 \ Z(s) = \left(L_1 s, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) $
10.75INVALID-ORDER-75 $Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
10.76INVALID-ORDER-76 $Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
$10.77 \text{INVALID-ORDER-} 77 \ Z(s) = \left(L_1 s, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) \ \dots $
10.78INVALID-ORDER-78 $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
$10.79 \text{INVALID-ORDER-} 79 \ Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  $
10.80INVALID-ORDER-80 $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
10.81INVALID-ORDER-81 $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
$10.82 \text{INVALID-ORDER-82 } Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) $
$10.83 \text{INVALID-ORDER-83 } Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) \dots \dots$
10.84INVALID-ORDER-84 $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
10.85INVALID-ORDER-85 $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
10.86INVALID-ORDER-86 $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
10.87INVALID-ORDER-87 $Z(s) = \left(L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
$10.88INVALID-ORDER-88 \ Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right) \ . \ . \ . \ . \ . \ . \ . \ . \ . \ $
10.89INVALID-ORDER-89 $Z(s) = \left(L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
$10.90 \text{INVALID-ORDER-90 } Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) $
$10.91\text{INVALID-ORDER-91 } Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right) $
$10.92 \text{INVALID-ORDER-92 } Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) $
10.93INVALID-ORDER-93 $Z(s) = \left(L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
$10.94 \text{INVALID-ORDER-} 94 \ Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) $
$10.95 \text{INVALID-ORDER-95 } Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{c_L}}\right) $
$10.96 \text{INVALID-ORDER-96 } Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L\right) $
10.97INVALID-ORDER-97 $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)$
10.98INVALID-ORDER-98 $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$
10.99INVALID-ORDER-99 $Z(s) = \left(L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
10.10 <b>Q</b> NVALID-ORDER-100 $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$
10.10INVALID-ORDER-101 $Z(s) = (L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1})$
$10.10 \text{ 2NVALID-ORDER-} 102 \ Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)  \dots $
10.10 INVALID-ORDER-103 $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$

$10.10 \text{ Invalid-Order-} 104 \ Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) \ \dots $
$10.10 \text{ INVALID-ORDER-} 105 \ Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) $
$10.10 \text{ NVALID-ORDER-} 106 \ Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L\right)$
$10.10 \text{INVALID-ORDER-} 107 \ Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  $
10.10 NVALID-ORDER-108 $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$
$10.10 \mathfrak{P} \text{NVALID-ORDER-109 } Z(s) = \left( L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s} \right) $
$10.110 \text{NVALID-ORDER-} 110 \ Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) \qquad . \qquad $
10.11INVALID-ORDER-111 $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$
10.112NVALID-ORDER-112 $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$
10.11 <b>2</b> NVALID-ORDER-113 $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
10.11 INVALID-ORDER-114 $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
10.11 INVALID-ORDER-115 $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
$10.11 \text{ 6} \text{NVALID-ORDER-} 116 \ Z(s) = \left(L_1 s, \ \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ R_L\right) $
$10.11 \text{INVALID-ORDER-} 117 \ Z(s) = \left(L_1 s, \ \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right) \ \dots \qquad \qquad$
$10.11 \text{ NVALID-ORDER-} 118 \ Z(s) = \left(L_1 s, \ \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)  \dots $
10.11 <b>9</b> NVALID-ORDER-119 $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
10.12 <b>0</b> NVALID-ORDER-120 $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
10.12INVALID-ORDER-121 $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
10.12 2NVALID-ORDER-122 $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
10.12 INVALID-ORDER-123 $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
10.124NVALID-ORDER-124 $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 62
10.12 INVALID-ORDER-125 $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
$10.12 \text{ (INVALID-ORDER-126 } Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, R_L\right) $
$10.12 \text{ finvalidation} = \left( \frac{C_2 L_2 s + 1}{L_2 s + L_2 + \frac{1}{C_2 s}} \right)$ $10.12 \text{ finvalidation} = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, R_L \right) $ $10.12 \text{ finvalidation} = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right) $ $62$ $10.12 \text{ finvalidation} = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{1}{C_L s} \right) $ $62$
$10.12 \text{ INVALID-ORDER-128 } Z(s) = \left(L_1 s, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) $ $10.12 \text{ INVALID-ORDER-129 } Z(s) = \left(L_1 s, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) $ $62$
$10.12 \mathfrak{P} \text{NVALID-ORDER-} 129 \ Z(s) = \left(L_1 s, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)  \dots $
$10.13 \text{ INVALID-ORDER-} 130 \ Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right) $ $10.13 \text{ INVALID-ORDER-} 131 \ Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) $ $63$
$10.13\text{INVALID-ORDER-}131\ Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{2}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)  \dots $
$10.132\text{NVALID-ORDER-}132 \ Z(s) = \left(L_1 s, \ \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) $ $ 63$
$\left(\begin{array}{ccc} L_{2S+162+\overline{C_2}s} & & & \\ & L_{2S+162+\overline{C_2}s} & & & \\ & & & \\ L_{2S+162+\overline{C_2}s} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ \end{array}\right)$
$10.13 \text{ MNVALID-UKDEK-133} \ Z(s) = \left( L_1 s, \frac{1}{L_2 + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right) \dots $
$10.13 \text{ INVALID-ORDER-133 } Z(s) = \left( L_1 s, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}},  \infty,  \infty,  \infty,  \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right) $ $10.13 \text{ INVALID-ORDER-134 } Z(s) = \left( L_1 s,  \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}},  \infty,  \infty,  \infty,  \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right) $ $63$

10.13 INVALID-ORDER-135 $Z(s) =$	$= \left(L_1 s, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}},  \infty,  \infty,  \infty,  \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)  \dots $	. 63
10.136NVALID-ORDER-136 $Z(s) =$	$=\left(rac{1}{C_1s},\;R_2,\;\infty,\;\infty,\;\infty,\;R_L ight)\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots$	. 63
10.13 <b>T</b> NVALID-ORDER-137 $Z(s) =$	$=\left(\frac{1}{C_1s},\ R_2,\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$	. 63
10.13&NVALID-ORDER-138 $Z(s) =$	$=\left(rac{1}{C_1s},\;R_2,\;\infty,\;\infty,\;\infty,\;R_L+rac{1}{C_Ls} ight)$	. 64
10.13 <b>9</b> NVALID-ORDER-139 $Z(s) =$	$= \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) \qquad \dots $	. 64
10.14 ONVALID-ORDER-140 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)  \dots $	. 64
10.14 <b>I</b> NVALID-ORDER-141 $Z(s) =$	$=\left(rac{1}{C_1s},\;R_2,\;\infty,\;\infty,\;\infty,\;L_Ls+R_L+rac{1}{C_Ls} ight)$	. 64
10.14 <b>2</b> NVALID-ORDER-142 $Z(s) =$	$=\left(rac{1}{C_{1}s},\;R_{2},\;\infty,\;\infty,\;\infty,\;rac{1}{C_{L}s+rac{1}{R_{L}}+rac{1}{L_{L}s}} ight)\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots\;\ldots$	. 64
10.14 <b>B</b> NVALID-ORDER-143 $Z(s) =$	$=\left(\begin{array}{cccccccccccccccccccccccccccccccccccc$	. 64
10.14 <b>4</b> NVALID-ORDER-144 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)  \dots $	. 64
10.14 NVALID-ORDER-145 $Z(s) =$	$=\left(\begin{array}{cccccccccccccccccccccccccccccccccccc$	. 64
10.146NVALID-ORDER-146 $Z(s) =$	$=\left(rac{1}{C_{1}s}, \; rac{1}{C_{2}s}, \; \infty, \; \infty, \; \infty, \; R_L + rac{1}{C_L s} ight)$	. 64
10.14 <b>T</b> NVALID-ORDER-147 $Z(s) =$	$=\left(rac{1}{C_{1}s},\;rac{1}{C_{2}s},\;\infty,\;\infty,\;\infty,\;L_{L}s+rac{1}{C_{L}s} ight)$	. 65
10.14&NVALID-ORDER-148 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) \dots \dots$	. 65
10.149NVALID-ORDER-149 $Z(s) =$	$=\left(rac{1}{C_{1}s},\;rac{1}{C_{2}s},\;\infty,\;\infty,\;\infty,\;L_{L}s+R_{L}+rac{1}{C_{L}s} ight)$	. 65
10.15 <b>0</b> NVALID-ORDER-150 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)  \dots $	. 65
10.15INVALID-ORDER-151 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  $	. 65
10.152NVALID-ORDER-152 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) \ \dots $	. 65
10.15 <b>3</b> NVALID-ORDER-153 $Z(s) =$	$=\left(\frac{1}{C_1s},\; \frac{R_2}{C_2R_2s+1},\; \infty,\; \infty,\; \infty,\; \frac{1}{C_Ls}\right)$	. 65
10.15#NVALID-ORDER-154 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right) \ \dots $	. 65
10.15 INVALID-ORDER-155 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) \qquad \dots $	. 65
10.15 <b>C</b> NVALID-ORDER-156 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)  \dots $	. 66
10.15 <b>T</b> NVALID-ORDER-157 $Z(s) =$	$=\left(\frac{1}{C_1s},\ \frac{R_2}{C_2R_2s+1},\ \infty,\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$	. 66
10.15 NVALID-ORDER-158 $Z(s) =$	$ \begin{pmatrix} C_{1s}, & C_{2}R_{2s+1}, & \infty, & \infty, & C_{L}L_{Ls}^{2}+1 \end{pmatrix} $ $ = \begin{pmatrix} \frac{1}{C_{1s}}, & \frac{R_{2}}{C_{2}R_{2s+1}}, & \infty, & \infty, & \infty, & L_{Ls} + R_{L} + \frac{1}{C_{Ls}} \end{pmatrix} $ $ = \begin{pmatrix} \frac{1}{C_{1s}}, & \frac{R_{2}}{C_{2}R_{2s+1}}, & \infty, & \infty, & \infty, & \frac{1}{C_{Ls} + \frac{1}{R_{L}} + \frac{1}{L_{Ls}}} \end{pmatrix} $ $ = \begin{pmatrix} \cdots & \cdots$	. 66
10.15 <b>9</b> NVALID-ORDER-159 $Z(s) =$	$ = \left( \frac{C_{1s}}{C_{1s}}, \frac{C_{2R_{2}s+1}}{C_{2R_{2}s+1}}, \infty, \infty, \infty, \frac{C_{Ls} + \frac{1}{R_{L}} + \frac{1}{L_{Ls}}}{C_{LL_{Ls}^{2}+1}} \right) $ $ = \left( \frac{1}{C_{1s}}, \frac{R_{2}}{C_{2R_{2}s+1}}, \infty, \infty, \infty, \infty, \frac{\frac{L_{Ls}}{C_{LL_{Ls}^{2}+1}} + R_{L}}{C_{Ls}^{2}} \right) $ $ = \left( \frac{1}{C_{1s}}, \frac{R_{2}}{C_{2R_{2}s+1}}, \infty, \infty, \infty, \infty, \frac{R_{L}\left(L_{Ls} + \frac{1}{C_{Ls}}\right)}{L_{Ls} + R_{L} + \frac{1}{C_{Ls}}} \right) $ $ = \left( \frac{1}{C_{1s}}, R_{2} + \frac{1}{C_{2s}}, \infty, \infty, \infty, \infty, \frac{R_{L}}{C_{Ls} + \frac{1}{C_{Ls}}} \right) $ $ = \left( \frac{1}{C_{1s}}, R_{2} + \frac{1}{C_{2s}}, \infty, \infty, \infty, \infty, \frac{R_{L}}{C_{LR_{Ls}+1}} \right) $	. 66
10.16 <b>0</b> NVALID-ORDER-160 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) $	. 66
10.16INVALID-ORDER-161 $Z(s) =$	$=\left(\frac{1}{C_1s},\ R_2+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$	. 66
10.16 <b>2</b> NVALID-ORDER-162 $Z(s) =$	$=\left(rac{1}{C_{1}s},\;R_{2}+rac{1}{C_{2}s},\;\infty,\;\infty,\;\infty,\;rac{R_{L}}{C_{L}R_{L}s+1} ight)$	. 66
10.16 <b>2</b> NVALID-ORDER-163 $Z(s) =$	$= \left(\frac{1}{C_{1s}}, R_2 + \frac{1}{C_{2s}}, \infty, \infty, \infty, R_L + \frac{1}{C_{Ls}}\right) \qquad \dots \qquad $	. 66
10.16#NVALID-ORDER-164 $Z(s) =$	$=\left(\frac{1}{C_{1}s},\ R_{2}+\frac{1}{C_{2}s},\ \infty,\ \infty,\ \infty,\ L_{L}s+\frac{1}{C_{L}s}\right)$	. 66
10.16 INVALID-ORDER- $165$ $Z(s) =$	$= \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) $ $= \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) $ $\dots $	. 67
10.16 <b>6</b> NVALID-ORDER-166 $Z(s) =$	$=\left(\frac{1}{C_{1s}},\ R_2+\frac{1}{C_{2s}},\ \infty,\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_{Ls}} ight)$	. 67
10.16 TNVALID-ORDER-167 $Z(s) =$	$= \left(\frac{1}{C_{1}s}, R_{2} + \frac{1}{C_{2}s}, \infty, \infty, \infty, \frac{1}{C_{L}s + \frac{1}{R_{L}} + \frac{1}{L_{L}s}}\right)^{\prime} \dots $ $= \left(\frac{1}{C_{1}s}, R_{2} + \frac{1}{C_{2}s}, \infty, \infty, \infty, \frac{L_{L}s}{C_{L}L_{L}s^{2} + 1} + R_{L}\right) \dots $	. 67
10.16 NVALID-ORDER-168 $Z(s) =$	$=\left(\frac{1}{C_{1}s},\ R_{2}+\frac{1}{C_{2}s},\ \infty,\ \infty,\ \infty,\ \frac{L_{L}s}{C_{L}L_{L}s^{2}+1}+R_{L}\right)$	. 67

	$R_L\left(L_L s + \frac{1}{C_L s}\right)$	
10.16 <b>9</b> NVALID-ORDER-169 $Z(s) =$	$\left(\frac{1}{C_1s}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L \left(\frac{L_L s + \overline{C_L s}}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) \dots \dots$	67
10.17 <b>0</b> NVALID-ORDER-170 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ R_L\right)$	67
10.17 <b>I</b> NVALID-ORDER-171 $Z(s) =$	$\left(\frac{1}{C_1s},\ L_2s+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$	67
10.172NVALID-ORDER-172 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$	67
10.178NVALID-ORDER-173 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$	68
10.17 <b>4</b> NVALID-ORDER-174 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$	68
10.175NVALID-ORDER-175 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)$	68
10.176NVALID-ORDER-176 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$	68
10.17 TNVALID-ORDER-177 $Z(s) =$	$=\left(\frac{1}{C_{1}s},\ L_{2}s+\frac{1}{C_{2}s},\ \infty,\ \infty,\ \infty,\ \frac{1}{C_{L}s+\frac{1}{R_{L}}+\frac{1}{L_{L}s}}\right)$	68
10.17&NVALID-ORDER-178 $Z(s) =$		68
10.17 <b>9</b> NVALID-ORDER-179 $Z(s) =$	$\left(\frac{1}{C_{1}s}, \ L_{2}s + \frac{1}{C_{2}s}, \ \infty, \ \infty, \ \infty, \ \frac{R_{L}\left(L_{L}s + \frac{1}{C_{L}s}\right)}{L_{L}s + R_{L} + \frac{1}{C_{L}s}}\right) $	68
10.18 <b>0</b> NVALID-ORDER-180 $Z(s) =$	$=\left(rac{1}{C_1s},\ L_2s+R_2+rac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ R_L ight)$	68
10.18 <b>I</b> NVALID-ORDER-181 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+R_2+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls}\right)$	69
10.18 <b>2</b> NVALID-ORDER-182 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+R_2+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ \frac{R_L}{C_LR_Ls+1}\right)$	69
10.18 <b>2</b> NVALID-ORDER-183 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+R_2+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$	69
10.184NVALID-ORDER-184 $Z(s) =$	$\left(\frac{1}{C_1s},\ L_2s+R_2+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ L_Ls+\frac{1}{C_Ls}\right)$	69
10.18 INVALID-ORDER-185 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)  \dots $	69
10.186NVALID-ORDER-186 $Z(s) =$	$=\left(\frac{1}{C_1s},\ L_2s+R_2+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)$	69
10.18 <b>T</b> NVALID-ORDER-187 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)  \dots $	69
10.18\mathbb{R}NVALID-ORDER-188 $Z(s) =$	$=\left(\frac{1}{C_{1}s},\ L_{2}s+R_{2}+\frac{1}{C_{2}s},\ \infty,\ \infty,\ \infty,\ \frac{L_{L}s}{C_{L}L_{L}s^{2}+1}+R_{L}\right)$	69
10.18 <b>9</b> NVALID-ORDER-189 $Z(s) =$	$= \left(\frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)  \dots $	70
10.19 <b>0</b> NVALID-ORDER-190 $Z(s) =$	$\left(\frac{1}{C_1s},\; \frac{L_2s}{C_2L_2s^2+1}+R_2,\; \infty,\; \infty,\; \infty,\; \infty,\; R_L\right)$	70
10.19 <b>I</b> NVALID-ORDER-191 $Z(s) =$	$\left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$	70
10.19 <b>2</b> NVALID-ORDER-192 $Z(s) =$	$\left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$	70
10.19 <b>B</b> NVALID-ORDER-193 $Z(s) =$	$ \frac{\left(\frac{1}{C_{1}s}, \frac{L_{2}s}{C_{2}L_{2}s^{2}+1} + R_{2}, \infty, \infty, \infty, \frac{1}{C_{L}s}\right)}{\left(\frac{1}{C_{1}s}, \frac{L_{2}s}{C_{2}L_{2}s^{2}+1} + R_{2}, \infty, \infty, \infty, \frac{R_{L}}{C_{L}R_{L}s+1}\right)} \\ + \left(\frac{1}{C_{1}s}, \frac{L_{2}s}{C_{2}L_{2}s^{2}+1} + R_{2}, \infty, \infty, \infty, \frac{R_{L}}{C_{L}R_{L}s+1}\right) \\ + \left(\frac{1}{C_{1}s}, \frac{L_{2}s}{C_{2}L_{2}s^{2}+1} + R_{2}, \infty, \infty, \infty, R_{L} + \frac{1}{C_{L}s}\right) \\ + \left(\frac{1}{C_{1}s}, \frac{L_{2}s}{C_{2}L_{2}s^{2}+1} + R_{2}, \infty, \infty, \infty, \infty, L_{L}s + \frac{1}{C_{L}s}\right) $	70
10.19#NVALID-ORDER-194 $Z(s) =$	$\left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$	70
40 40 PORTER OF PER 40 F P( )	$\int \int \int ds ds = \int \int ds ds$	
10.196NVALID-ORDER-196 $Z(s) =$	$\left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$	70
10.19 <b>T</b> NVALID-ORDER-197 $Z(s) =$	$\left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$	71
10.19 NVALID-ORDER-198 $Z(s) =$	$\left(\frac{1}{C_1s}, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right) \dots \dots$	71
10.19 <b>9</b> NVALID-ORDER-199 $Z(s) =$	$\left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$	71
10.20 <b>0</b> NVALID-ORDER-200 $Z(s) =$	$\left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L\right)$	71
10.20INVALID-ORDER-201 $Z(s) = % {\textstyle\int\limits_{s=0}^{s}} \left( {{{\cal S}_{s}}} \right) \left( {{{\cal S}_{s}}} $	$ \frac{(\vec{c}_1s, \ c_2L_2s^3+1}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{C_LL_ss^2+1}{C_LL_ss^2+1} \right) $ $ \frac{1}{C_1s}, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ L_Ls + R_L + \frac{1}{C_Ls} \right) $ $ \frac{1}{C_1s}, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}} \right) $ $ \frac{1}{C_1s}, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_Ls}{C_LL_s^2+1} + R_L \right) $ $ \frac{1}{C_1s}, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_Ls}{C_LL_s^2+1} + R_L \right) $ $ \frac{1}{C_1s}, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L(L_Ls + \frac{1}{C_Ls})}{L_Ls + R_L + \frac{1}{C_Ls}} \right) $ $ \frac{1}{C_1s}, \ \frac{R_2(L_2s + \frac{1}{C_2s})}{L_2s + R_2 + \frac{1}{C_2s}}, \ \infty, \ \infty, \ \infty, \ R_L \right) $ $ \frac{1}{C_1s}, \ \frac{R_2(L_2s + \frac{1}{C_2s})}{L_2s + R_2 + \frac{1}{C_2s}}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_Ls} \right) $	71

$10.20 \text{ 2NVALID-ORDER-} 202 \ Z(s) = \left(\frac{1}{C_1 s}, \ \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right) \ . \ . \ . \ . \ . \ . \ . \ . \ . \ $	. 71
10.20 INVALID-ORDER-203 $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$	. 71
10.20 INVALID-ORDER-204 $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$	. 71
$10.20 \text{ INVALID-ORDER-205 } Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)'$	. 72
10.20 <b>6</b> NVALID-ORDER-206 $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$	. 72
$10.20 \text{INVALID-ORDER-} 207 \ Z(s) = \left(\frac{1}{C_1 s}, \ \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_I} + \frac{1}{L_I s}}\right) \right) $	. 72
$10.20 \text{\&NVALID-ORDER-208 } Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}},  \infty,  \infty,  \infty,  \infty,  \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) $	. 72
$10.20 \text{ @NVALID-ORDER-209 } Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)^{\prime} \dots \dots$	. 72
$10.21 \text{@NVALID-ORDER-} 210 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2, \ \infty, \ \infty, \ \infty, \ R_L\right) \qquad \dots \qquad \dots $	. 72
$10.21 \text{INVALID-ORDER-} 211 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)  \dots $	. 72
$10.212\text{NVALID-ORDER-}212\ Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ R_2,\ \infty,\ \infty,\ \infty,\ \frac{L_Ls}{C_LL_Ls^2+1}\right)\ \dots$	. 72
$10.21 \text{ @NVALID-ORDER-213 } Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) \ \dots $	. 73
10.21\(\text{4NVALID-ORDER-214}\(Z(s) = \left(\frac{R_1}{C_1R_1s+1}, R_2, \infty, \in	. 73
$10.21 \text{ INVALID-ORDER-} 215 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)  \dots $	. 73
10.216NVALID-ORDER-216 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$	. 73
$10.21 \text{INVALID-ORDER-} 217 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right) \ \dots $	. 73
10.21 NVALID-ORDER-218 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$	. 73
10.21 <b>9</b> NVALID-ORDER-219 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1}\right)$	. 73
$10.22\text{@NVALID-ORDER-}220 \ Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ L_Ls + R_L + \frac{1}{C_Ls}\right) \ \dots $	. 73
$10.22 \text{INVALID-ORDER-} 221 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)^{-1} $	. 74
$10.22 \text{ \tiny 2NVALID-ORDER-222} \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) \ \dots $	. 74
$10.22 \texttt{ENVALID-ORDER-} 222 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ $10.22 \texttt{ENVALID-ORDER-} 223 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ $10.22 \texttt{ENVALID-ORDER-} 224 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$	. 74
10.22\(\text{INVALID-ORDER-224}\(Z(s) = \bigc\) $\frac{R_1}{C_1R_1s+1}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_Ls} \bigc)$	. 74
$10.225 \text{NVALID-ORDER-} 225 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_2}{C_L R_L s^2}\right) $ $10.226 \text{NVALID-ORDER-} 226 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) $	. 74
$10.226 \text{NVALID-ORDER-} 226 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_1 L_1 s^2 + 1}\right)$	. 74
$10.22\text{TNVALID-ORDER-}227\ Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \frac{R_2}{C_2R_2s+1},\ \infty,\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)\ \dots$	. 74
10.22\( \text{NVALID-ORDER-228} \( Z(s) = \begin{pmatrix} \frac{R_1}{C_1 R_1 s + 1}, & \frac{R_2}{C_2 R_2 s + 1}, & \infty, &	. 74
10.22 <b>9</b> NVALID-ORDER-229 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$	. 75
$10.23 \text{@NVALID-ORDER-} 230 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) $	. 75
$10.23 \text{INVALID-ORDER-} 231 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right) $	. 75
10.232NVALID-ORDER-232 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L}{C_1R_1s+1}\right)$	. 75
$10.23 \text{INVALID-ORDER-} 231 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \frac{1}{C_L s}\right)$ $10.23 \text{INVALID-ORDER-} 232 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$ $10.23 \text{INVALID-ORDER-} 233 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$ $10.23 \text{INVALID-ORDER-} 233 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$	. 75

```
10.23 INVALID-ORDER-235 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_1 L_L s^2 + 1}\right) \dots \dots \dots \dots
10.23 INVALID-ORDER-237 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_r} + \frac{1}{L_r s}}\right) . . . . . . . . . . . . . . . . . .
10.23\( \text{NVALID-ORDER-238} \( Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right) \quad \qq \quad \quad \quad \quad \quad \quad \quad \qua
10.24 \text{ @NVALID-ORDER-} 240 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L\right) \quad \dots 
10.24INVALID-ORDER-241 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_1 s}\right) \dots \dots \dots
10.242NVALID-ORDER-242 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) \dots
10.24\( \text{NVALID-ORDER-243} \( Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, 
10.24\(\text{INVALID-ORDER-244}\(Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \infty, \infty, \infty, \infty, \infty \left(L_L s + \frac{1}{C_L s}\right) \\ \tag{1.5}
10.24 INVALID-ORDER-245 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_1 L_L s^2 + 1}\right) .....
10.24\text{INVALID-ORDER-}247 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{L_1 s} + \frac{1}{L_2 s}}\right) \ \dots 
10.24\( \text{NVALID-ORDER-248} \( Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, 
10.249NVALID-ORDER-249 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) \dots \dots \dots \dots \dots
10.25@NVALID-ORDER-250 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L\right) . . . . . . . . . . . . . . .
10.25INVALID-ORDER-251 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_4 s}\right) . . . . . .
10.252NVALID-ORDER-252 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_1 R_1 s + 1}\right) \dots
10.254NVALID-ORDER-254 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) \dots \dots
10.25 INVALID-ORDER-255 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) .....
10.25 \text{INVALID-ORDER-} 257 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_r} + \frac{1}{L_r s}}\right) \ \dots 
10.25\( \text{NVALID-ORDER-258} \( Z(s) = \left( \frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right) \quad \tag{78}
10.259NVALID-ORDER-259 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)......
10.26 QNVALID-ORDER-260 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right) \dots \dots \dots \dots
10.26INVALID-ORDER-261 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_{L,s}}\right) . . . . . . .
10.26 2NVALID-ORDER-262 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_1 R_1 s + 1}\right) .....
10.26 INVALID-ORDER-263 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_{r.s}}\right) \dots \dots
10.264NVALID-ORDER-264 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) . . . . . . . . .
10.26 INVALID-ORDER-265 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) ......
10.26 INVALID-ORDER-267 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_r} + \frac{1}{L_r s}}\right)
```

10.26 NVALID-ORDER-268 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
$10.26 \text{ @NVALID-ORDER-269 } Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) \qquad . \qquad $
$10.27 \text{@NVALID-ORDER-} 270 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \$
10.27INVALID-ORDER-271 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 8
$10.272 \text{NVALID-ORDER-} 272 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right) \ . \ . \ . \ . \ . \ . \ . \ . \ . \ $
$10.27 \text{\&NVALID-ORDER-} 273 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right) \qquad . \qquad \qquad . $
$10.27 \text{ INVALID-ORDER-} 274 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right) \ . \ . \ . \ . \ . \ . \ . \ . \ . \ $
$10.27 \text{5NVALID-ORDER-} 275 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right) \ . \ . \ . \ . \ . \ . \ . \ . \ . \ $
$10.276 \text{NVALID-ORDER-} 276 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) \ . \ . \ . \ . \ . \ . \ . \ . \ . \ $
$10.27\text{INVALID-ORDER-}277\ Z(s) = \left(\frac{R_1}{C_1R_1s+1},\ \frac{R_2\left(L_2s+\frac{1}{C_2s}\right)}{L_2s+R_2+\frac{1}{L_2s}},\ \infty,\ \infty,\ \infty,\ \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}\right) \qquad . \qquad \qquad . $
$10.27 \$NVALID-ORDER-278 \ Z(s) = \left(\frac{R_1}{C_1 R_1 s+1}, \ \frac{R_2 \left(L_2 s+\frac{1}{C_2 s}\right)}{L_2 s+R_2+\frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2+1} + R_L\right) $
$10.27 \text{ (NVALID-ORDER-279 } Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}},  \infty,  \infty,  \infty,  \infty,  \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)  \dots $
$10.28 \text{ @NVALID-ORDER-280 } Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L\right)  \dots \qquad \qquad$
10.28INVALID-ORDER-281 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
10.28 2NVALID-ORDER-282 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
10.28\frac{2}{2}\text{NVALID-ORDER-283} $Z(s) = \left(R_1 + \frac{1}{C_{18}}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_{L8}}\right)$
10.28 INVALID-ORDER-284 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
10.28 INVALID-ORDER-285 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
10.286NVALID-ORDER-286 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
10.28 TNVALID-ORDER-287 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
10.28 NVALID-ORDER-288 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)'$
10.28 INVALID-ORDER-289 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
$10.29 \text{@NVALID-ORDER-} 290 \ Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)  \dots \qquad 8$
10.28 <b>9</b> NVALID-ORDER-289 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 10.29 <b>0</b> NVALID-ORDER-290 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 10.29 <b>1</b> NVALID-ORDER-291 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 8
10.292NVALID-ORDER-292 $Z(s) = \{R_1 + \frac{1}{C_{-s}}, \frac{1}{C_{-s}}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_{-s}}\}$
10.29 RNVALID-ORDER-293 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
10.29\textbf{Envalidation} NVALID-ORDER-293 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 8 $10.29\tilde{Envalidation} NVALID-ORDER-294 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) 8$
10.29 INVALID-ORDER-295 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 8 $10.29 \text{INVALID-ORDER-296 } Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 8
10.296NVALID-ORDER-296 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 8
$10.29 \text{INVALID-ORDER-} 297 \ Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) $ $10.29 \text{INVALID-ORDER-} 298 \ Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right) $ $8$
10.29 NVALID-ORDER-298 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$

10.29 <b>9</b> NVALID-ORDER-299 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$	83
10.30@NVALID-ORDER-300 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$	83
$10.30 \text{INVALID-ORDER-301 } Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) $	83
10.302NVALID-ORDER-302 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$	83
$10.30$ RNVALID-ORDER-303 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) \dots \dots$	83
10.304NVALID-ORDER-304 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$	84
10.30 INVALID-ORDER-305 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$	84
$10.30 \text{ (ENVALID-ORDER-306 } Z(s) = \left( R_1 + \frac{1}{C_1 s}, \ \frac{R_2}{C_2 R_2 s + 1}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right)  \dots $	84
10.30 TNVALID-ORDER-307 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ .	84
10.30\text{\text{ENVALID-ORDER-308}} $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$	84
10.30 <b>9</b> NVALID-ORDER-309 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$	84
10.31@NVALID-ORDER-310 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$	84
10.31INVALID-ORDER-311 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$	84
10.31\( \text{2NVALID-ORDER-312} \( Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \inft	84
10.31\(\text{ENVALID-ORDER-313}\(Z(s) = \left( R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \inf	85
10.31 INVALID-ORDER-314 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$	85
10.315NVALID-ORDER-315 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$	85
10.316NVALID-ORDER-316 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$	85
$10.31 \text{INVALID-ORDER-317 } Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right) $	85
10.31 NVALID-ORDER-318 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$	85
10.31 INVALID-ORDER-319 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$	85
10.32 INVALID-ORDER-320 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$	85
10.32INVALID-ORDER-321 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$	86
$10.32 \mathbb{P} \text{NVALID-ORDER-} 322 \ Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)  \dots $	86
10.32\frac{2}{3}\text{NVALID-ORDER-323} $Z(s) = \left( R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)^{-1} \dots \dots$	
10.32\(\text{INVALID-ORDER-324}\(Z(s) = \left( R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \infty, \inf	86
10.325NVALID-ORDER-325 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)'$	86
10.326NVALID-ORDER-326 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)^{C_L s}$	86
10.32 <b>T</b> NVALID-ORDER-327 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$	86
10.32\ \text{NVALID-ORDER-328} \ Z(s) = \left( R_1 + \frac{1}{C_{1s}}, \ L_2s + R_2 + \frac{1}{C_{2s}}, \ \infty, \in	86
10.329NVALID-ORDER-329 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$	87
10.33 INVALID-ORDER-330 $Z(s) = \left(R_1 + \frac{1}{C_{18}}, L_2 s + R_2 + \frac{1}{C_{28}}, \infty, \infty, \infty, L_L s + \frac{1}{C_{L8}}\right)$	87
$10.33 \text{INVALID-ORDER-} 331 \ Z(s) = \left(R_1 + \frac{1}{C_{rs}}, \ L_2 s + R_2 + \frac{1}{C_{rs}}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_{rs} L_{rs}^2 + 1}\right) \dots \dots$	87
$10.332\text{NVALID-ORDER-}332 \ Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) \ \dots $	87

,		
10.33\( \text{ENVALID-ORDER-333} \( Z(s) = \left( R_1 + \frac{1}{C_1 s}, L_2 s + R_2 \right) \)	$+\frac{1}{C_2s}$ , $\infty$ , $\infty$ , $\infty$ , $\frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}$	 
10.334NVALID-ORDER-334 $Z(s) = (R_1 + \frac{1}{C_1 s}, L_2 s + R_2)$		 
10.335NVALID-ORDER-335 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2\right)$	$+\frac{1}{C_2s}$ , $\infty$ , $\infty$ , $\infty$ , $\infty$ , $\frac{R_L\left(L_Ls+\frac{1}{C_Ls}\right)}{L_Ls+R_L+\frac{1}{C_Ls}}$	 
10.336NVALID-ORDER-336 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1}\right)$	$+R_2, \infty, \infty, \infty, R_L$	 
10.33 <b>f</b> NVALID-ORDER-337 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1}\right)$	$+R_2, \infty, \infty, \infty, \frac{1}{C_L s}$	 
10.33\( \text{NVALID-ORDER-338} \( Z(s) = \left( R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} \right) \)	$+R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s+1}$	 
10.33 <b>9</b> NVALID-ORDER-339 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1}\right)$	$+R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}$	 
10.34 <b>0</b> NVALID-ORDER-340 $Z(s) = \left(R_1 + \frac{1}{C_{1s}}, \frac{L_{2s}}{C_2L_2s^2+1}\right)$	$+R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}$	 
10.34INVALID-ORDER-341 $Z(s) = \left(R_1 + \frac{1}{C_{1s}}, \frac{L_{2s}}{C_2 L_2 s^2 + 1}\right)$	$+R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}$	 
10.342NVALID-ORDER-342 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1}\right)$	$+R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}$	 
10.34 <b>B</b> NVALID-ORDER-343 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1}\right)$	$+R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}$	 
10.34 INVALID-ORDER-344 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1}\right)$		 
10.34 <b>5</b> NVALID-ORDER-345 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1}\right)$	$c_{L^s}$	 89
10.346NVALID-ORDER-346 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	$\frac{\frac{1}{2s}}{\frac{1}{C_2s}}$ , $\infty$ , $\infty$ , $\infty$ , $\infty$ , $R_L$ )	 
10.34 INVALID-ORDER-347 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	$\frac{\frac{1}{2s}}{\frac{1}{C_2s}}$ , $\infty$ , $\infty$ , $\infty$ , $\frac{1}{C_Ls}$	 
10.348NVALID-ORDER-348 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	$\frac{\frac{1}{2^s}}{\frac{1}{C_2s}}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}$	 
10.349NVALID-ORDER-349 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	$\frac{\frac{1}{2s}}{\frac{1}{C_2s}}$ , $\infty$ , $\infty$ , $\infty$ , $R_L + \frac{1}{C_Ls}$	 
10.350NVALID-ORDER-350 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	$\frac{\frac{1}{2s}}{\frac{1}{C_2s}}$ , $\infty$ , $\infty$ , $\infty$ , $\infty$ , $L_L s + \frac{1}{C_L s}$	 
10.35INVALID-ORDER-351 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	C <sub>2</sub> s /	 
10.352NVALID-ORDER-352 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	$\frac{\frac{1}{2s}}{\frac{1}{C_2s}}$ , $\infty$ , $\infty$ , $\infty$ , $\infty$ , $L_L s + R_L + \frac{1}{C_L s}$ )	 
10.35 <b>2</b> NVALID-ORDER-353 $Z(s) = \left(R_1 + \frac{1}{C_1}, \frac{R_2(L_2s + \frac{1}{C_2})}{R_1 + R_2(L_2s + \frac{1}{C_2})}\right)$	$\frac{1}{22s}$ , $\infty$ , $\infty$ , $\infty$ , $\infty$ , $\frac{1}{2s+1+1}$	 
10.354NVALID-ORDER-354 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	$\frac{\frac{1}{C_2s}}{\frac{1}{C_2s}}$ , $\infty$ , $\infty$ , $\infty$ , $\infty$ , $\frac{L_Ls}{C_LL_Ls^2+1}+R_L$ )	 
10.35 <b>5</b> NVALID-ORDER-355 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}\right)$	$\frac{\frac{1}{2s}}{\frac{1}{C_2s}}$ , $\infty$ , $\infty$ , $\infty$ , $\infty$ , $\frac{R_L\left(L_Ls+\frac{1}{C_Ls}\right)}{L_Ls+R_L+\frac{1}{C_Ls}}$	 
10.356NVALID-ORDER-356 $Z(s) = (L_1 s + \frac{1}{C_1 s}, R_2, \infty,$	$\infty, \infty, \frac{1}{C_L s}$	 
10.35 NVALID-ORDER-357 $Z(s) = (L_1 s + \frac{1}{C_1 s}, R_2, \infty,$	$\infty, \infty, \frac{\stackrel{f}{R_L}}{C_L R_L s + 1}$	 
10.35 NVALID-ORDER-358 $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \right)$	$\infty$ , $\infty$ , $R_L + \frac{1}{C_{LS}}$ )	 
10.35 <b>9</b> NVALID-ORDER-359 $Z(s) = (L_1 s + \frac{1}{C_1 s}, R_2, \infty,$	$\infty$ , $\infty$ , $L_L s + \frac{1}{C_L s}$	 
10.360NVALID-ORDER-360 $Z(s) = (L_1 s + \frac{1}{2}, R_2, \infty)$	$\infty$ , $\infty$ , $\frac{L_L s}{\sigma}$	 
10.36INVALID-ORDER-361 $Z(s) = (L_1 s + \frac{1}{C_1 s}, R_2, \infty,$	$\infty$ , $\infty$ , $L_L s + R_L + \frac{1}{C_L s}$ )	 
10.362NVALID-ORDER-362 $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \right)$	$\infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}$	 
10.36\(\mathbf{E}\)NVALID-ORDER-363 $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \right)$	$\infty$ , $\infty$ , $\frac{L_L s}{C_L L_L s^2 + 1} + R_L$ )	 

```
10.364NVALID-ORDER-364 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) \dots \dots \dots
10.36 INVALID-ORDER-365 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L\right) \dots \dots \dots
10.36 INVALID-ORDER-366 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_1 s}\right) . . . . . . .
10.36 INVALID-ORDER-367 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) ....
10.36\(\text{NVALID-ORDER-368}\) Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) \dots
10.369NVALID-ORDER-369 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) ...
10.370NVALID-ORDER-370 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) \dots \dots \dots
10.372NVALID-ORDER-372 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{L_L s}}\right) \dots \dots \dots
10.378NVALID-ORDER-373 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) \dots \dots
10.37\(\text{INVALID-ORDER-374}\(Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \infty, \frac{R_L \left( L_L s + \frac{1}{C_L s} \right)}{L_L s + R_L + \frac{1}{C_L s}} \right) \quad \tag{2.5}
10.37 INVALID-ORDER-375 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right) . . . . . . . . . .
10.376NVALID-ORDER-376 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_1 s}\right) \dots
10.37 INVALID-ORDER-377 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) \dots
10.37\( \text{NVALID-ORDER-378} \( Z(s) = \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_0 R_0 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_1 s} \right) \dots
10.379NVALID-ORDER-379 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) \dots
10.38 INVALID-ORDER-380 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) ......
10.382NVALID-ORDER-382 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{L_L s}}\right) \dots \dots \dots \dots
10.382NVALID-ORDER-383 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) . . . . . . . . . . . .
10.384NVALID-ORDER-384 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) . . . . . . . . . . . .
10.38 INVALID-ORDER-385 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L\right) \dots \dots \dots
10.386NVALID-ORDER-386 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_1 s}\right) . . . . . .
10.38TNVALID-ORDER-387 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) . . .
10.38 NVALID-ORDER-388 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_1 s}\right) \dots
10.389NVALID-ORDER-389 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
10.39@NVALID-ORDER-390 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) \dots \dots \dots
10.39INVALID-ORDER-391 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) \dots
10.392NVALID-ORDER-392 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{L_1 s} + \frac{1}{L_2 s}}\right)
10.39 INVALID-ORDER-393 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) \dots \dots
10.39 INVALID-ORDER-394 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_T s}}\right) . . . . . . . . . .
10.396NVALID-ORDER-396 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_1 s}\right) \dots
10.39INVALID-ORDER-397 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) .......95
```

```
10.39\( \text{NVALID-ORDER-398} \( Z(s) = \left( L_1 s + \frac{1}{C_{1.8}}, \ L_2 s + \frac{1}{C_{2.8}}, \ \infty, \infty, \ \infty, \ \infty, \infty, \ \infty, \ \infty, \ \infty, \ \infty, \ \infty, \ \i
10.39 INVALID-ORDER-399 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) \dots \dots \dots
10.40 INVALID-ORDER-406 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_1 s}\right) ......
10.40 NVALID-ORDER-408 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) . . . . . . . . . . . . . . . . .
10.40 NVALID-ORDER-409 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) \dots \dots \dots
10.41 INVALID-ORDER-414 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)^{-1}.
10.41\text{TNVALID-ORDER-}417\ Z(s) = \left(L_1s + \frac{1}{C_1s}, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_1R_1s+1}\right) \qquad 98
10.41 NVALID-ORDER-418 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) \dots \dots \dots
10.419NVALID-ORDER-419 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) . . . . . . . . . . . .
10.422NVALID-ORDER-422 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_T} + \frac{1}{L_T s}}\right)
10.424NVALID-ORDER-424 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)......
10.42 \text{INVALID-ORDER-} 425 \ Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_1 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ R_L\right) \quad \dots
```

10.43 <b>0</b> NVALID-ORDER-430 $Z(s) =$	$= \left(L_1 s + \frac{1}{C_1 s}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right) \qquad . \qquad $	99
10.43INVALID-ORDER-431 $Z(s) =$	$= \left(L_1 s + \frac{1}{C_1 s}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right) \ \dots $	99
10.43 <b>2</b> NVALID-ORDER-432 $Z(s) =$	$\left(L_{1}s + \frac{1}{C_{1}s}, \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, \infty, \infty, \infty, \frac{1}{C_{L}s + \frac{1}{R_{L}} + \frac{1}{L_{L}s}}\right) \right) $	99
	$= \left( L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}},  \infty,  \infty,  \infty,  \infty,  \frac{L_L s}{C_L L_L s^2 + 1} + R_L \right) $ (10)	00
10.43 <b>\!</b> NVALID-ORDER-434 $Z(s) =$	$ \left(L_{1}s + \frac{1}{C_{1}s}, \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, \infty, \infty, \infty, \infty, \frac{R_{L}\left(L_{L}s + \frac{1}{C_{L}s}\right)}{L_{L}s + R_{L} + \frac{1}{C_{L}s}}\right) \dots \dots$	00
10.435NVALID-ORDER- $435 Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, R_2, \infty, \infty, \infty, \frac{1}{C_Ls}\right) \dots \dots$	00
10.43 <b>6</b> NVALID-ORDER-436 $Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, R_2, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls+1}\right) \dots \dots$	00
10.43 <b>T</b> NVALID-ORDER-437 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) \dots \dots$	00
10.43\mathbb{E}\mathbb{N}\mathbb{V}\mathbb{A}\mathbb{L}\mathbb{D}\mathbb{C}\mathbb{R}\mathbb{D}\mathbb{E}\mathbb{R}-438\ Z(s) =	$=\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1},\ R_{2},\ \infty,\ \infty,\ \infty,\ L_{L}s+\frac{1}{C_{L}s}\right)$	00
10.43 <b>9</b> NVALID-ORDER-439 $Z(s) =$	$=\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1},\ R_{2},\ \infty,\ \infty,\ \infty,\ \frac{L_{L}s}{C_{L}L_{L}s^{2}+1}\right)$	00
$10.44 \hbox{\tt 0} \hbox{\scriptsize NVALID-ORDER-} 440~Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \ R_2, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  $	00
10.44 INVALID-ORDER-441 $Z(s) = \displaystyle$	$\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, R_{2}, \infty, \infty, \infty, \frac{1}{C_{L}s+\frac{1}{R_{L}}+\frac{1}{L_{L}s}}\right)\right]$	01
10.442NVALID-ORDER-442 $Z(s)=$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) \dots \dots$	01
10.44\bar{B}\text{NVALID-ORDER-443} $Z(s) =$	$ \left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, R_{2}, \infty, \infty, \infty, \frac{R_{L}\left(L_{L}s+\frac{1}{C_{L}s}\right)}{L_{L}s+R_{L}+\frac{1}{C_{L}s}}\right) \dots \dots$	01
10.44#NVALID-ORDER-444 $Z(s)=$	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{1}{C_2s}, \infty, \infty, \infty, \infty, R_L\right)$	01
10.44 <b>5</b> NVALID-ORDER-445 $Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls}\right) \dots \dots$	01
10.44  6 NVALID-ORDER-446  Z(s) =	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls+1}\right)  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  $	01
$10.44 {\tt T} {\tt NVALID-ORDER-447} \ Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{1}{C_2s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  \dots  $	01
10.44&NVALID-ORDER-448 $Z(s) =$	$\left(\frac{L_{1s}}{C_{1}L_{1s}^{2}+1}, \frac{1}{C_{2s}}, \infty, \infty, \infty, \infty, L_{Ls} + \frac{1}{C_{Ls}}\right) \dots \dots$	01
10.44 <b>9</b> NVALID-ORDER-449 $Z(s) =$	$=\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1}\right)' \dots \dots$	01
10.45 <b>0</b> NVALID-ORDER-450 $Z(s) =$	$\left(\frac{L_{1s}}{C_{1}L_{1s}^{2}+1}, \frac{1}{C_{2s}}, \infty, \infty, \infty, \infty, L_{Ls} + R_{L} + \frac{1}{C_{Ls}}\right) \dots \dots$	
10.45 INVALID-ORDER-451 $Z(s) = \displaystyle$	$ \frac{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \frac{1}{C_{L}s+\frac{1}{R_{L}}+\frac{1}{L_{L}s}}\right)}{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \frac{L_{L}s}{C_{L}L_{L}s^{2}+1} + R_{L}\right)}  $ $ \frac{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \frac{R_{L}\left(L_{L}s+\frac{1}{C_{L}s}\right)}{L_{L}s+R_{L}+\frac{1}{C_{L}s}}\right)}{L_{L}s+R_{L}+\frac{1}{C_{L}s}}  $ 10	02
10.45 <b>2</b> NVALID-ORDER-452 $Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right) \qquad 10$	02
10.45%NVALID-ORDER-453 $Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L\left(L_Ls+\frac{1}{C_Ls}\right)}{L_Ls+R_L+\frac{1}{C_Ls}}\right) \dots \dots$	02
10.45#NVALID-ORDER-454 $Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \infty, R_L\right)$	02
10.45 <b>5</b> NVALID-ORDER-455 $Z(s) =$	$ \frac{\left(C_{1}L_{1}s^{2}+1, C_{2}s, \infty, \infty, \infty, L_{L}s+R_{L}+\frac{1}{C_{L}s}\right)}{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \infty, R_{L}\right)} \qquad 10 $ $ \frac{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \frac{1}{C_{L}s}\right)}{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \infty, \frac{R_{L}}{C_{L}R_{L}s+1}\right)} \qquad 10 $ $ \frac{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \infty, \frac{R_{L}}{C_{L}R_{L}s+1}\right)}{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \infty, \frac{R_{L}}{C_{L}R_{L}s+1}\right)} \qquad 10 $	02
10.45  @NVALID-ORDER-456  Z(s) =	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls+1}\right)$	02
10.45TNVALID-ORDER- $457$ $Z(s) =$	$\left\{\frac{L_1s}{C\cdot L_1s^2+1}, \frac{R_2}{C\cdot R_2s+1}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C\cdot s}\right\}$	02
10.45&NVALID-ORDER-458 $Z(s) =$	$ \frac{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, L_{L}s + \frac{1}{C_{L}s}\right)}{\left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \infty, \frac{L_{L}s}{C_{L}L_{L}s^{2}+1}\right)} \dots \dots$	02
10.45 <b>9</b> NVALID-ORDER-459 $Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1}\right)$	03
10.46 <b>0</b> NVALID-ORDER-460 $Z(s) =$	$= \left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, L_{L}s+R_{L}+\frac{1}{C_{L}s}\right)   $	03
10.46INVALID-ORDER-461 $Z(s) =$	$ \left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \frac{1}{C_{L}s+\frac{1}{R_{L}}+\frac{1}{L_{L}s}}\right)' \dots \dots$	03
10.46 <b>2</b> NVALID-ORDER-462 $Z(s) =$	$\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_1s^2+1} + R_L\right)$	03

```
10.462NVALID-ORDER-463 Z(s) = \left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \frac{R_{L}\left(L_{L}s+\frac{1}{C_{L}s}\right)}{L_{L}s+R_{L}+\frac{1}{C_{L}s}}\right) . . . . . . . . . . . . . . . . .
10.46 INVALID-ORDER-465 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_4 s}\right) \dots \dots
10.46 INVALID-ORDER-466 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) \dots
10.46 INVALID-ORDER-467 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_1 s}\right) \dots
10.46 NVALID-ORDER-468 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) \dots
10.469NVALID-ORDER-469 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_1 L_1 s^2 + 1}\right) \dots \dots
10.472NVALID-ORDER-472 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) .....
10.47\ \text{INVALID-ORDER-474}\ Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right) \dots \dots \dots \dots
10.47 INVALID-ORDER-475 Z(s) = \left(\frac{L_1 s}{C_1 L_0 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_1 s}\right) \dots \dots
10.476NVALID-ORDER-476 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_1 R_1 s + 1}\right) ....
10.47 INVALID-ORDER-477 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_4 s}\right) \dots \dots
10.482NVALID-ORDER-482 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_1 L_1 s^2 + 1} + R_L\right) \dots \dots \dots
10.48 INVALID-ORDER-483 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
10.48\(\text{INVALID-ORDER-484}\) Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L\right) \dots \dots \dots
10.48 INVALID-ORDER-485 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_4 s}\right) \dots \dots
10.48 INVALID-ORDER-486 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) . . . .
10.48 INVALID-ORDER-487 Z(s) = \left(\frac{L_1 s}{C_1 L_2 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_1 s}\right) \dots
10.489NVALID-ORDER-489 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_1 L_1 s^2 + 1}\right) ......
10.49@NVALID-ORDER-490 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) \dots \dots \dots
10.49INVALID-ORDER-491 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_r} + \frac{1}{L_r s}}\right) ......
10.49 INVALID-ORDER-495 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right) \dots \dots \dots
```

```
10.49 INVALID-ORDER-497 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) . . . .
10.49\( \text{NVALID-ORDER-498} \) Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_1 L_2 s} \right) \dots \dots \dots
10.499NVALID-ORDER-499 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right) . . . . . . .
10.50@NVALID-ORDER-500 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) \dots
10.50INVALID-ORDER-501 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right) \dots
\left(\frac{L_1s}{C_1L_1s^2+1}, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)' . . . . . . . . . . . . . . . .
10.50BNVALID-ORDER-503 Z(s) =
                                    10.504NVALID-ORDER-504 Z(s) =
                                   \left(\frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \frac{R_{2}\left(L_{2}s+\frac{1}{C_{2}s}\right)}{L_{2}s+R_{2}+\frac{1}{C_{2}s}}, \infty, \infty, \infty, \frac{1}{C_{L}s}\right) .....
10.505NVALID-ORDER-505 Z(s) =
                                    \frac{C}{C_{1}L_{1}s} = \frac{L_{1}s}{C_{1}L_{1}s^{2}+1}, \quad \frac{R_{2}\left(L_{2}s+\frac{1}{C_{2}s}\right)}{L_{2}s+R_{2}+\frac{1}{C_{2}s}}, \quad \infty, \quad \infty, \quad \infty, \quad \frac{R_{L}}{C_{L}R_{L}s+1} = 0. 
10.50 6NVALID-ORDER-506 Z(s) =
                                    10.50TNVALID-ORDER-507 Z(s) =
                                   10.508NVALID-ORDER-508 Z(s) =
                                    \frac{C}{C_1L_1s^2+1}, \frac{R_2\left(L_2s+\frac{1}{C_2s}\right)}{L_2s+R_2+\frac{1}{C_2s}}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1}
10.50 9NVALID-ORDER-509 Z(s) =
                                    10.510NVALID-ORDER-510 Z(s)
                                   10.51INVALID-ORDER-511 Z(s)
                                    10.512NVALID-ORDER-512 Z(s) =
                                    10.514NVALID-ORDER-514 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right) \dots \dots \dots \dots \dots
10.51 INVALID-ORDER-515 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) \dots
10.516NVALID-ORDER-516 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_{18}}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_{L8}}\right) . . .
10.51 INVALID-ORDER-517 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) \dots
10.51\( \text{NVALID-ORDER-518} \( Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_1 s^2 + 1} \right) \] \tag{1.5}
10.519NVALID-ORDER-519 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) . . . . .
10.520NVALID-ORDER-520 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right) \dots
10.52INVALID-ORDER-521 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) \dots \dots
10.522NVALID-ORDER-522 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
10.528NVALID-ORDER-523 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L\right) \dots
10.524NVALID-ORDER-524 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right) \dots \dots \dots
10.52 INVALID-ORDER-525 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
10.526NVALID-ORDER-526 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) \dots
10.52 INVALID-ORDER-527 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
10.52\( \text{NVALID-ORDER-528} \( Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} \right)
```

10.529NVALID-ORDER-529 $Z(s) = 0$	$\left(L_{1}s + R_{1} + \frac{1}{C_{1}s}, \frac{1}{C_{2}s}, \infty, \infty, \infty, L_{L}s + R_{L} + \frac{1}{C_{L}s}\right)$	111
10.53 ONVALID-ORDER- $530 Z(s) = 10.53$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_r} + \frac{1}{L_rs}}\right)'$	111
	$\left(L_1s + R_1 + \frac{1}{C_1s}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right) \dots \dots$	111
10.53 <b>2</b> NVALID-ORDER- $532 Z(s) = 10.53$	$\left(L_{1}s + R_{1} + \frac{1}{C_{1}s}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \frac{R_{L}\left(L_{L}s + \frac{1}{C_{L}s}\right)}{L_{L}s + R_{L} + \frac{1}{C_{L}s}}\right) - \dots - $	112
		112
	$\left(L_1s+R_1+rac{1}{C_1s},rac{R_2}{C_2R_2s+1},\infty,\infty,\infty,\infty,rac{1}{C_1s} ight)$	112
		112
	$\left(L_1s+R_1+rac{1}{C_1s}, rac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \infty, R_L+rac{1}{C_Ls} ight)$	112
	$\left(L_1s+R_1+rac{1}{C_1s},\ rac{R_2}{C_Rs_s+1},\ \infty,\ \infty,\ \infty,\ L_Ls+rac{1}{C_Ls} ight)$	112
	$\left(L_1s+R_1+rac{1}{C_1s},\;rac{R_2}{C_2R_2s+1},\;\infty,\;\infty,\;\infty,\;\infty,\;rac{L_Ls}{C_LL_Ls^2+1} ight)'$	112
	$\left(L_{1}s+R_{1}+rac{1}{C_{1}s},\;rac{R_{2}}{C_{2}R_{2}s+1},\;\infty,\;\infty,\;\infty,\;\infty,\;L_{L}s+R_{L}+rac{1}{C_{L}s} ight)$	112
10.54 <b>0</b> NVALID-ORDER-540 $Z(s) = 1$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \frac{R_2}{C_2R_2s + 1}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$	113
10.54INVALID-ORDER-541 $Z(s) = 0$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$	113
10.54 <b>2</b> NVALID-ORDER-542 $Z(s) = 1$	$\left(L_{1}s + R_{1} + \frac{1}{C_{1}s}, \frac{R_{2}}{C_{2}R_{2}s + 1}, \infty, \infty, \infty, \frac{R_{L}\left(L_{L}s + \frac{1}{C_{L}s}\right)}{L_{L}s + R_{L} + \frac{1}{C_{L}s}}\right) \dots \dots$	113
10.548NVALID-ORDER-543 $Z(s) = 0$	$\left(L_1s+R_1+rac{1}{C_1s},\ R_2+rac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ R_L ight)$	113
10.54#NVALID-ORDER-544 $Z(s) = 0$	$\left(L_1s+R_1+rac{1}{C_1s},\ R_2+rac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ rac{1}{C_Ls} ight)$	113
10.545NVALID-ORDER-545 $Z(s) = 0$	$\left(L_1s+R_1+rac{1}{C_1s},\ R_2+rac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ rac{R_L}{C_LR_Ls+1} ight)$	113
10.546NVALID-ORDER-546 $Z(s) = 0$	$(L_1s + R_1 + \frac{1}{C_1s}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_Ls})$	113
10.54 TNVALID-ORDER-547 $Z(s) = 0$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \ R_2 + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ L_Ls + \frac{1}{C_Ls}\right)$	113
10.54&NVALID-ORDER-548 $Z(s) = 0$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \ R_2 + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$	114
10.54 <b>9</b> NVALID-ORDER-549 $Z(s) = 0$	$\left(L_1s+R_1+\frac{1}{C_1s},\ R_2+\frac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ L_Ls+R_L+\frac{1}{C_Ls}\right)  \ldots \qquad \ldots$	114
10.550NVALID-ORDER-550 $Z(s) = 1$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \ R_2 + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_Ls + \frac{1}{R_I} + \frac{1}{L_Is}}\right)$	114
10.55 <b>I</b> NVALID-ORDER-551 $Z(s) = 0$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \ R_2 + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right)$	114
10.55 <b>2</b> NVALID-ORDER-552 $Z(s) = 1$	$ \left( L_{1}s + R_{1} + \frac{1}{C_{1}s}, \ R_{2} + \frac{1}{C_{2}s}, \ \infty, \ \infty, \ \infty, \ \frac{L_{L}s}{C_{L}L_{L}s^{2} + 1} + R_{L} \right) $ $ \left( L_{1}s + R_{1} + \frac{1}{C_{1}s}, \ R_{2} + \frac{1}{C_{2}s}, \ \infty, \ \infty, \ \infty, \ \frac{R_{L}\left(L_{L}s + \frac{1}{C_{L}s}\right)}{L_{L}s + R_{L} + \frac{1}{C_{L}s}} \right) $ $ \ldots $	114
10.55BNVALID-ORDER- $553$ $Z(s) = 0$	$\left(L_1s+R_1+rac{1}{C_1s},\ L_2s+rac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ \infty,\ R_L ight)$	114
10.554NVALID-ORDER- $554$ $Z(s) = ($	$(L_1s + R_1 + \frac{1}{C_1s}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_2s})$	114
10.55 <b>5</b> NVALID-ORDER-555 $Z(s) = 0$	$(L_1s + R_1 + \frac{1}{C_1s}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls+1})$	114
10.55 <b>6</b> NVALID-ORDER-556 $Z(s) = 0$	$\left(L_{1}s+R_{1}+rac{1}{C_{1}s},\ L_{2}s+rac{1}{C_{2}s},\ \infty,\ \infty,\ \infty,\ R_{L}+rac{1}{C_{L}s} ight)$	115
10.55TNVALID-ORDER- $557$ $Z(s) = ($	$\left(L_1s+R_1+rac{1}{C_1s},\ L_2s+rac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ L_Ls+rac{1}{C_Ls} ight)$	115
10.55&NVALID-ORDER-558 $Z(s) = 0$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \ L_2s + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$	115
10.55 <b>9</b> NVALID-ORDER-559 $Z(s) = 0$		115
10.560NVALID-ORDER-560 $Z(s) = 1$	$\left(L_1s + R_1 + \frac{1}{C_1s}, \ L_2s + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_Ls + \frac{1}{R_s} + \frac{1}{L_Ls}}\right)$	115
10.56INVALID-ORDER-561 $Z(s) = 0$	$\left(L_1s+R_1+rac{1}{C_1s},\ L_2s+rac{1}{C_2s},\ \infty,\ \infty,\ \infty,\ rac{L_Ls}{C_LL_Ls^2+1}+R_L ight)$	115
10.562NVALID-ORDER-562 $Z(s) = 1$	$\left(L_{1}s + R_{1} + \frac{1}{C_{1}s}, \ L_{2}s + \frac{1}{C_{2}s}, \ \infty, \ \infty, \ \infty, \ \frac{R_{L}\left(L_{L}s + \frac{1}{C_{L}s}\right)}{L_{L}s + R_{L} + \frac{1}{C_{L}s}}\right) \right) \dots $	115

```
10.56 INVALID-ORDER-563 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right) \dots \dots \dots
 10.564NVALID-ORDER-564 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{1}{C_1 s}\right) . . . . . . . . . . . . . . .
 10.56 INVALID-ORDER-565 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) \dots \dots
 10.56 INVALID-ORDER-566 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_1 s}\right) . . . . . . . .
 10.56 INVALID-ORDER-567 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) ......
10.56\( \text{NVALID-ORDER-568} \( Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \infty, \ \infty, \ \infty, \ \infty, \ \infty, \ \infty, \ \i
 10.569NVALID-ORDER-569 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
 10.57 INVALID-ORDER-570 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_r} + \frac{1}{L_r s}}\right) \ldots \ldots \ldots
 10.57INVALID-ORDER-571 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) \dots \dots
 10.572NVALID-ORDER-572 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_T s}}\right)
 10.578NVALID-ORDER-573 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right) . . . . . . . . . . . . . . . . .
 10.574NVALID-ORDER-574 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_1 s}\right) \dots \dots
 10.57 INVALID-ORDER-575 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) .....
 10.576NVALID-ORDER-576 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) \dots
 10.57 INVALID-ORDER-577 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right) ......
10.57\( \text{NVALID-ORDER-578} \( Z(s) = \left( L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, 
 10.579NVALID-ORDER-579 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) \dots \dots \dots
 10.58 INVALID-ORDER-580 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_T} + \frac{1}{L_T s}}\right)
 10.58INVALID-ORDER-581 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) . . . . . . . .
 10.58BNVALID-ORDER-583 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, 118\right)
10.58 \text{INVALID-ORDER-585} \ Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_7 s}}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right) \ \dots 
10.58\( \text{NVALID-ORDER-588} \( Z(s) = \left( \frac{1}{L_1 s} + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \
 10.59INVALID-ORDER-591 \ Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) 
10.592 \text{NVALID-ORDER-} 592 \ Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_1 s}}, \ \infty, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right) \ \dots
```

10.594NVALID-ORDER-594 $Z(s)=$	$\left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$
10.59 INVALID-ORDER-595 $Z(s)=$	$\left(\frac{1}{C_1s+\frac{1}{R_1}+\frac{1}{L_1s}},\ R_2,\ \infty,\ \infty,\ R_L+\frac{1}{C_Ls}\right)$
10.596NVALID-ORDER-596 $Z(s)=$	$\left(\frac{1}{C_{1}s+\frac{1}{R_{1}}+\frac{1}{L_{1}s}}, R_{2}, \infty, \infty, \infty, L_{L}s+\frac{1}{C_{L}s}\right) $ 120
10.59¶NVALID-ORDER-597 $Z(s) = \\$	$\left(\frac{1}{C_{1}s+\frac{1}{R_{1}}+\frac{1}{L_{1}s}}, R_{2}, \infty, \infty, \infty, \frac{L_{L}s}{C_{L}L_{L}s^{2}+1}\right) \dots \dots$
10.59&NVALID-ORDER-598 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{R_{1}} + \frac{1}{L_{1}s}}, R_{2}, \infty, \infty, \infty, L_{L}s + R_{L} + \frac{1}{C_{L}s}\right) \dots \dots$
10.59 <b>9</b> NVALID-ORDER-599 $Z(s) =$	$\left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right) $
10.60 <b>0</b> NVALID-ORDER-600 $Z(s) =$	$\begin{pmatrix} C_1 U + R_1 + L_1 s \end{pmatrix}$
10.60INVALID-ORDER-601 $Z(s) = \displaystyle$	$\left(\frac{1}{C_{1}s + \frac{1}{R_{1}} + \frac{1}{L_{1}s}}, R_{2}, \infty, \infty, \infty, \frac{R_{L}\left(L_{L}s + \frac{1}{C_{L}s}\right)}{L_{L}s + R_{L} + \frac{1}{C_{L}s}}\right) \dots \dots$
10.602NVALID-ORDER-602 $Z(s) =$	$\left(\frac{1}{C_{1}s+\frac{1}{R_{1}}+\frac{1}{L_{1}s}}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \infty, R_{L}\right) \dots \dots$
10.60%NVALID-ORDER-603 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{R_{1}} + \frac{1}{L_{1}s}}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \frac{1}{C_{L}s}\right) \dots \dots$
10.60#NVALID-ORDER-604 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{R_{1}} + \frac{1}{L_{1}s}}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \frac{R_{L}}{C_{L}R_{L}s + 1}\right) $ (12)
10.60\$NVALID-ORDER-605 $Z(s) =$	$\begin{pmatrix} C_1 S_1 + L_1 S_2 & C_2 S_3 & C_4 S_4 \end{pmatrix}$
10.606NVALID-ORDER-606 $Z(s) = \\$	$\left(\frac{1}{C_{1s} + \frac{1}{R_{1}} + \frac{1}{L_{1}s}}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \infty, L_{L}s + \frac{1}{C_{L}s}\right) \dots \dots$
10.60 TNVALID-ORDER-607 $Z(s) =$	$\begin{pmatrix} \cdot \cdot$
10.60&NVALID-ORDER-608 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{R_{1}} + \frac{1}{L_{1}s}}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \infty, L_{L}s + R_{L} + \frac{1}{C_{L}s}\right) $
10.609NVALID-ORDER-609 $Z(s) =$	$\begin{pmatrix} c_1c_1 + R_1 + L_1s_1 & c_2s_1 & c_2s_1 + L_1s_1 \end{pmatrix}$
10.61 <b>0</b> NVALID-ORDER-610 $Z(s) =$	$\left(\begin{array}{cccccccccccccccccccccccccccccccccccc$
10.61 <b>I</b> NVALID-ORDER-611 $Z(s) =$	$\left(\frac{1}{C_{1s} + \frac{1}{R_{1}} + \frac{1}{L_{1s}}}, \frac{1}{C_{2s}}, \infty, \infty, \infty, \frac{R_{L}\left(L_{Ls} + \frac{1}{C_{Ls}}\right)}{L_{Ls} + R_{L} + \frac{1}{C_{Ls}}}\right) \dots \dots$
10.612NVALID-ORDER-612 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{R_{1}} + \frac{1}{L_{1}s}}, \frac{R_{2}}{C_{2}R_{2}s + 1}, \infty, \infty, \infty, \infty, R_{L}\right) $ (122)
10.61 <b>&amp;</b> NVALID-ORDER-613 $Z(s) =$	$\left(\frac{1}{C_{1}s+\frac{1}{R_{1}}+\frac{1}{L_{1}s}}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \frac{1}{C_{L}s}\right) \dots \dots$
10.61#NVALID-ORDER-614 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{R_{1}} + \frac{1}{L_{1}s}}, \frac{R_{2}}{C_{2}R_{2}s + 1}, \infty, \infty, \infty, \infty, \frac{R_{L}}{C_{L}R_{L}s + 1}\right) $
10.61 NVALID-ORDER-615 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{L_{1}s}}, \frac{R_{2}}{C_{2}R_{2}s + 1}, \infty, \infty, \infty, R_{L} + \frac{1}{C_{L}s}\right) \dots \dots$
10.616NVALID-ORDER-616 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{L_{1}s}}, \frac{R_{2}}{C_{2}R_{2}s + 1}, \infty, \infty, \infty, L_{L}s + \frac{1}{C_{L}s}\right) \qquad 122$
10.61 INVALID-ORDER-617 $Z(s) =$	$\left(\frac{1}{C_{1}s + \frac{1}{L_{1}s}}, \frac{R_{2}}{C_{2}R_{2}s + 1}, \infty, \infty, \infty, \frac{L_{L}s}{C_{L}L_{L}s^{2} + 1}\right) \dots \dots$
10.618NVALID-ORDER-618 $Z(s) =$	$\left(\begin{array}{cccc} C_1s + \overline{R_1} + \overline{L_1s} & C_2R_2s + 1 & C_Ls \end{array}\right)$
10.619NVALID-ORDER-619 $Z(s) =$	$\begin{pmatrix} C_1s + R_1 + L_1s & C_2R_2s + 1 & C_Ls + R_L + L_Ls \end{pmatrix}$
10.620NVALID-ORDER-620 $Z(s) =$	$\left( \begin{array}{cccccccccccccccccccccccccccccccccccc$
10.62INVALID-ORDER-621 $Z(s) =$	$\left(\frac{1}{C_{1}s+\frac{1}{R_{1}}+\frac{1}{L_{1}s}}, \frac{R_{2}}{C_{2}R_{2}s+1}, \infty, \infty, \infty, \frac{R_{L}\left(L_{L}s+\frac{1}{C_{L}s}\right)}{L_{L}s+R_{L}+\frac{1}{C_{L}s}}\right) - \dots - 126$

10.67 <b>9</b> NVALID-ORDER-679 $Z(s) =$	(01215   1		$, \infty, \frac{L_L s}{C_L L_L s^2 + 1}$	. /		 	 	 	 		 . 130
10.680NVALID-ORDER-680 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$_1, R_2, \infty, \infty$	$,  \infty,  \frac{R_L \left(L_L s + \frac{1}{6}\right)}{L_L s + R_L + \frac{1}{6}}$	$\left(\frac{\frac{1}{C_L s}}{\frac{1}{C_L s}}\right)$		 	 	 	 		 . 130
10.68 <b>I</b> NVALID-ORDER-681 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$, \frac{1}{C_2 s}, \infty, \infty$	$\infty, \infty, R_L$ ) .			 	 	 	 		 . 130
10.682NVALID-ORDER-682 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$, \frac{1}{C_2 s}, \infty, \infty$	$\circ,  \infty,  \frac{1}{C_L s} \bigg)   .$			 	 	 	 		 . 130
10.68 <b>2</b> NVALID-ORDER-683 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$\frac{1}{C_2s}$ , $\infty$ , $\infty$	$o, \infty, \frac{R_L}{C_L R_L s + 1}$	)		 	 	 	 		 . 130
10.68#NVALID-ORDER-684 $Z(s) =$	$= \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1 \right)$	$\frac{1}{C_2s}$ , $\infty$ , $\propto$	$\infty$ , $\infty$ , $R_L + \frac{1}{C_L}$	$\left(\frac{1}{2}\right)$		 	 	 	 		 . 131
10.68 INVALID-ORDER-685 $Z(s) =$	\ -	- 4	$0, \infty, L_L s + \frac{1}{C_I}$	`\		 	 	 	 		 . 131
10.68 <b>C</b> NVALID-ORDER-686 $Z(s) =$	> -	_	$0, \infty, \frac{L_L s}{C_L L_L s^2 + 1}$	/		 	 	 	 	• • • • • • •	 . 131
10.68TNVALID-ORDER- $687$ $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$, \frac{1}{C_2 s}, \infty, \infty$	$0, \infty, L_L s + R_s$	$L + \frac{1}{C_L s}$ ).		 	 	 	 		 . 131
10.68 NVALID-ORDER-688 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$_1, \ \frac{1}{C_2s}, \ \infty, \ \circ$	$\infty$ , $\infty$ , $\frac{1}{C_L s + \frac{1}{R_L}}$	$\left(\frac{1}{L_L s}\right)$		 	 	 	 		 . 131
10.68 <b>9</b> NVALID-ORDER-689 $Z(s) =$	(	-	$\infty$ , $\infty$ , $\frac{L_L s}{C_L L_L s^2 + 1}$	. /		 	 	 	 		 . 131
10.69 ONVALID-ORDER-690 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$_{1}, \frac{1}{C_{2}s}, \infty, \circ$	$\infty,  \infty,  R_L(L_L s + L_L s + R_L + L_L s + R_L + L_L s + R_L $	$\left(\frac{\frac{1}{C_L s}}{\frac{1}{C_L s}}\right)$		 	 	 	 		 . 131
10.69 <b>I</b> NVALID-ORDER-691 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$, \frac{R_2}{C_2R_2s+1}, c$	$\infty, \infty, \infty, R_L$			 	 	 	 		 . 131
10.69 <b>2</b> NVALID-ORDER-692 $Z(s) =$	01210 11	021020   1	$\infty$ , $\infty$ , $\infty$ , $\frac{1}{C_L s}$	,		 	 	 	 		 . 132
10.69\$NVALID-ORDER-693 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$\frac{R_2}{C_2R_2s+1}$ , 0	$\infty$ , $\infty$ , $\infty$ , $\frac{R}{C_L R}$	$\left(\frac{L}{L s+1}\right)$		 	 	 	 		 . 132
10.69#NVALID-ORDER-694 $Z(s) =$	> 1 1 1	- 2 - 2	$\infty$ , $\infty$ , $\infty$ , $R_L$	2 /		 	 	 	 		 . 132
10.69 <b>5</b> NVALID-ORDER-695 $Z(s) =$	> 1 1			2 /		 	 	 	 		 . 132
10.69 <b>6</b> NVALID-ORDER-696 $Z(s) =$	> -	_	$\infty$ , $\infty$ , $\infty$ , $\frac{L}{C_L L_L}$	,		 	 	 	 	• • • • • • • •	 . 132
10.69TNVALID-ORDER- $697$ $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$\frac{R_2}{C_2R_2s+1}$ , o	$\infty$ , $\infty$ , $\infty$ , $L_L s$	$+R_L + \frac{1}{C_L}$	$\left(\frac{1}{8}\right)$	 	 	 	 	• • • • • • • •	 . 132
10.69 NVALID-ORDER-698 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$\frac{R_2}{C_2R_2s+1}$ , (	$\infty$ , $\infty$ , $\infty$ , $\overline{C_L s}$	$\frac{1}{+\frac{1}{R_L}+\frac{1}{L_L s}}$		 	 	 	 		 . 132
10.69 <b>9</b> NVALID-ORDER-699 $Z(s) =$	( 1 1 .		$\infty$ , $\infty$ , $\infty$ , $\frac{L}{C_L L_L}$		)	 	 	 	 		 . 132
10.70 <b>0</b> NVALID-ORDER-700 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$\frac{R_2}{C_2R_2s+1}$ , (	$\infty$ , $\infty$ , $\infty$ , $\frac{R_L(}{L_L s}$	$\frac{L_L s + \frac{1}{C_L s}}{+R_L + \frac{1}{C_L s}}$		 	 	 	 		 . 133
10.70INVALID-ORDER-701 $Z(s) =$ 10.70INVALID-ORDER-702 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$R_2 + \frac{1}{C_2 s}$	$\infty$ , $\infty$ , $\infty$ , $R_L$	)		 	 	 	 		 . 133
10.70 <b>2</b> NVALID-ORDER-702 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$R_2 + \frac{1}{C_2 s}$	$\infty$ , $\infty$ , $\infty$ , $\frac{1}{C_{LS}}$	$\left( \cdot \right) \cdot \cdot \cdot \cdot \cdot$		 	 	 	 		 . 133
10.70\forallnVALID-ORDER-703 $Z(s) =$ 10.70\forallnVALID-ORDER-704 $Z(s) =$ 10.70\forallnVALID-ORDER-705 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$R_2 + \frac{1}{C_2 s},$	$\infty$ , $\infty$ , $\infty$ , $\frac{1}{C_L R}$	$\left(\frac{R_L}{R_L s+1}\right)$		 	 	 	 		 . 133
10.70\(\frac{1}{4}\)NVALID-ORDER-704 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$R_2 + \frac{1}{C_2 s}$	$\infty$ , $\infty$ , $\infty$ , $R_L$	$+\frac{1}{C_L s}$ .		 	 	 	 		 . 133
10.70 <b>5</b> NVALID-ORDER-705 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$R_2 + \frac{1}{C_2 s}$	$\infty$ , $\infty$ , $\infty$ , $L_{L_{S}}$	$s + \frac{1}{C_L s}$ .		 	 	 	 		 . 133
10.70 <b>6</b> NVALID-ORDER-706 $Z(s) =$	$= \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1 \right)$	$R_2 + \frac{1}{C_2 s}$	$\infty$ , $\infty$ , $\infty$ , $\frac{1}{C_L I}$	$\left(\frac{L_L s}{L_L s^2 + 1}\right)$ .		 	 	 	 		 . 133
10.70 <b>T</b> NVALID-ORDER-707 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$R_2 + \frac{1}{C_2 s},$	$\infty$ , $\infty$ , $\infty$ , $L_{L_{S}}$	$s + R_L + \frac{1}{C_L}$	$\left(\frac{1}{\sqrt{s}}\right)$	 	 	 	 	• • • • • • • •	 . 133
10.70&NVALID-ORDER-708 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$_{1}, R_{2} + \frac{1}{C_{2}s},$	$\infty$ , $\infty$ , $\infty$ , $\overline{C_{L}}$	$\left(\frac{1}{s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$		 	 	 	 		 . 134
10.70 <b>9</b> NVALID-ORDER-709 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$R_2 + \frac{1}{C_2 s},$	$\infty$ , $\infty$ , $\infty$ , $\overline{C_L R}$	$\frac{L_L s}{L_L s^2 + 1} + R_L$	L)	 	 	 	 		 . 134
10.71 <b>0</b> NVALID-ORDER-710 $Z(s) =$ 10.71 <b>1</b> NVALID-ORDER-711 $Z(s) =$ 10.71 <b>2</b> NVALID-ORDER-712 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$_{1}, R_{2} + \frac{1}{C_{2}s},$	$\infty$ , $\infty$ , $\infty$ , $\frac{R_L}{L_L}$	$\frac{\left(L_L s + \frac{1}{C_L s}\right)}{s + R_L + \frac{1}{C_L s}}$	)	 	 	 	 		 . 134
10.71INVALID-ORDER-711 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$L_2s + \frac{1}{C_2s}$	$\infty$ , $\infty$ , $\infty$ , $R_I$	(a)		 	 	 	 		 . 134
10.712NVALID-ORDER-712 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1\right)$	$L_{1}, L_{2}s + \frac{1}{C_{2}s},$	$\infty$ , $\infty$ , $\infty$ , $\frac{1}{C_L}$	$\overline{s}$ )		 	 	 	 		 . 134

```
10.718NVALID-ORDER-713 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) . . . . . . .
10.71\(\text{INVALID-ORDER-714}\(Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \
10.716NVALID-ORDER-716 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_1 L_1 s^2 + 1}\right) \dots \dots \dots
10.719NVALID-ORDER-719 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right) \dots \dots \dots
10.720NVALID-ORDER-720 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right).
10.72INVALID-ORDER-721 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right) . . . . . . . . . . . .
10.72 NVALID-ORDER-723 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_1 R_1 s + 1}\right) ......
10.72 INVALID-ORDER-724 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) \dots \dots \dots
10.726NVALID-ORDER-726 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_1 L_1 s^2 + 1}\right) \dots \dots \dots
10.73 NVALID-ORDER-733 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right) ......
10.734NVALID-ORDER-734 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right) .....
10.73 INVALID-ORDER-736 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_1 L_1 s^2 + 1}\right) ......
10.73\( \text{NVALID-ORDER-738} \( Z(s) = \left( \frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \infty, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{L^2} + \frac{1}{L_2}} \right) \quad \qua
10.74 \text{ INVALID-ORDER-743 } Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_5 s}}, \, \infty, \, \infty, \, \infty, \, \infty, \, \frac{R_L}{C_L R_L s + 1}\right) \quad \dots 
10.74 \text{INVALID-ORDER-}744 \ Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right) \ \dots 
10.74 INVALID-ORDER-745 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_1 s}}\right), \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}
```

10.746NVALID-ORDER-746 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \ \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)  \dots $	. 138
10.74¶NVALID-ORDER-747 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right) \dots \dots$	. 138
10.74&NVALID-ORDER-748 $Z(s) =$	$= \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right) \dots \dots$	. 139
10.74 <b>9</b> NVALID-ORDER-749 $Z(s)=$	$\left(\begin{smallmatrix} c_1 z_1 c_1 + r_2 & c_2 c_3 & c_2 c_4 c_5 \end{smallmatrix}\right)$	. 139
10.75 <b>0</b> NVALID-ORDER-750 $Z(s) =$	$\begin{pmatrix} C_1 L_1 s + 1 & L_2 s + R_2 + \frac{1}{C_2 s} & L_L s + R_L + \frac{1}{C_L s} \end{pmatrix}$	. 139
10.75INVALID-ORDER-751 $Z(s) =$	$\left(\begin{array}{ccc} E_{1s+I_{1}} + I_{C_{1}s} & & & \\ & & & \\ & & & & \end{array}\right)$	. 139
10.75 <b>2</b> NVALID-ORDER-752 $Z(s) =$	$\left(\frac{D_1 + D_1 + C_{1s}}{C_{1s}}\right)$	. 139
10.75 <b>&amp;</b> NVALID-ORDER-753 $Z(s) =$	$\left(\begin{array}{cccccccccccccccccccccccccccccccccccc$	. 139
10.75 <b>4</b> NVALID-ORDER-754 $Z(s) =$	$\left(\begin{array}{cccc} E_{1} & E_{1} & E_{2} \\ E_{2} & E_{3} \end{array}\right)$	. 139
10.75 <b>Б</b> NVALID-ORDER-755 $Z(s) =$	$\left(\begin{array}{cccccccccccccccccccccccccccccccccccc$	. 139
10.75 <b>6</b> NVALID-ORDER-756 $Z(s) =$	$\left(\begin{array}{cccc} L_{1s} + L_{1} + C_{1s} & & & \\ & & & \\ & & & & \end{array}\right)$	. 140
10.75 <b>T</b> NVALID-ORDER-757 $Z(s) =$	$\left(\begin{array}{cccc} L_{1s} & L_{1} & L_{2s} \\ L_{2s} & L_{2s} & L_{2s} \end{array}\right)$	. 140
10.75&NVALID-ORDER-758 $Z(s) =$	$\left(\begin{array}{cccc} E_{1} & E_{1} & E_{2} & E_{3} & E_{4} & E_{5} & E_$	. 140
10.75 <b>9</b> NVALID-ORDER-759 $Z(s) =$	$\left(\begin{array}{ccc} Z_{1^{c}+1^{c}1^{c}} & Z_{2^{c}} & Z_{2^{c}} \end{array}\right)$	. 140
10.76 <b>0</b> NVALID-ORDER-760 $Z(s) =$	$\left(\begin{array}{ccc} L_{1} \circ + L_{1} + C_{1} s & 2 \end{array}\right)$	. 140
10.76INVALID-ORDER-761 $Z(s) =$	$\left(\begin{array}{cccc} L_1 s + L_1 + C_1 s & c_2 s & c_2 s \end{array}\right)$	. 140
10.76 <b>2</b> NVALID-ORDER-762 $Z(s) =$	$\left(\begin{array}{ccc}L_1s+n_1+\frac{1}{C_1s}&C_2s&C_Ln_Ls+1\end{array}\right)$	. 140
10.76% NVALID-ORDER-763 $Z(s) =$	$ \frac{\left(R_{1}\left(L_{1}s+\frac{1}{C_{1}s}\right)}{L_{1}s+R_{1}+\frac{1}{C_{1}s}}, \frac{1}{C_{2}s}, \infty, \infty, \infty, \infty, R_{L}+\frac{1}{C_{L}s}\right) \dots \dots$	. 140
10.76#NVALID-ORDER-764 $Z(s) =$	$\left(\frac{R_1\left(L_1s+C_1s\right)}{L_1s+R_1+\frac{1}{C_1s}}, \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls+\frac{1}{C_Ls}\right) \qquad \dots $	. 141
10.76 <b>5</b> NVALID-ORDER-765 $Z(s) =$	$ \left(\frac{R_1\left(L_1s+\frac{1}{C_1s}\right)}{L_1s+R_1+\frac{1}{C_1s}}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1}\right) \dots \dots$	. 141
10.76 <b>6</b> NVALID-ORDER-766 $Z(s) =$	$ \frac{\left(L_{1}s + R_{1} + \frac{1}{C_{1}s}\right)}{\left(L_{1}s + R_{1} + \frac{1}{C_{1}s}\right)},  \frac{1}{C_{2}s},  \infty,  \infty,  \infty,  C_{L}L_{L}s^{2} + 1\right)}{\left(L_{1}s + R_{1} + \frac{1}{C_{1}s}\right)} \\ = \left(\frac{R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right)}{L_{1}s + R_{1} + \frac{1}{C_{1}s}},  \frac{1}{C_{2}s},  \infty,  \infty,  \infty,  \frac{1}{C_{L}s + \frac{1}{R_{L}} + \frac{1}{L_{L}s}}\right) \\ = \left(\frac{R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right)}{L_{1}s + R_{1} + \frac{1}{C_{1}s}},  \frac{1}{C_{2}s},  \infty,  \infty,  \infty,  \frac{1}{C_{L}s + \frac{1}{R_{L}} + \frac{1}{L_{L}s}}\right) \\ = \left(\frac{R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right)}{R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right)},  \frac{1}{C_{2}s},  \infty,  \infty,  \infty,  \infty,  \infty,  \infty,  \infty,  $	. 141
10.76TNVALID-ORDER- $767$ $Z(s) =$	$\left(\frac{R_1(L_1s+C_1s)}{L_1s+R_1+\frac{1}{C_1s}}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls+\frac{1}{R_L}+\frac{1}{L_Ls}}\right) \dots \dots$	. 141
10.76\n\text{NVALID-ORDER-768} $Z(s) =$	$\left(\frac{R_1\left(L_1s+C_{1s}\right)}{L_1s+R_1+\frac{1}{C_{1s}}}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right) \dots \dots$	. 141
10.76 <b>9</b> NVALID-ORDER-769 $Z(s) =$	$ \frac{\left(L_{1}s+R_{1}+\frac{1}{C_{1}s}\right)}{L_{1}s+R_{1}+\frac{1}{C_{1}s}},  \frac{1}{C_{2}s},  \infty,  \infty,  \infty,  \frac{L_{L}s}{C_{L}L_{L}s^{2}+1}+R_{L}\right)}{L_{1}s+R_{1}+\frac{1}{C_{1}s}},  \frac{1}{C_{2}s},  \infty,  \infty,  \infty,  \frac{R_{L}\left(L_{L}s+\frac{1}{C_{L}s}\right)}{L_{L}s+R_{L}+\frac{1}{C_{L}s}}\right) \\ = \left(\frac{R_{1}\left(L_{1}s+\frac{1}{C_{1}s}\right)}{L_{1}s+R_{1}+\frac{1}{C_{1}s}},  \frac{1}{C_{2}s},  \infty,  \infty,  \infty,  \frac{R_{L}\left(L_{L}s+\frac{1}{C_{L}s}\right)}{L_{L}s+R_{L}+\frac{1}{C_{L}s}}\right)}{L_{1}s+R_{1}+\frac{1}{C_{1}s}},  \frac{R_{2}}{C_{2}R_{2}s+1},  \infty,  \infty,  \infty,  R_{L}\right) \\ = \left(\frac{R_{1}\left(L_{1}s+\frac{1}{C_{1}s}\right)}{L_{1}s+R_{1}+\frac{1}{C_{1}s}},  \frac{R_{2}}{C_{2}R_{2}s+1},  \infty,  \infty,  \infty,  \infty,  R_{L}\right) \\ = \left(\frac{R_{1}\left(L_{1}s+\frac{1}{C_{1}s}\right)}{L_{1}s+R_{1}+\frac{1}{C_{1}s}},  \frac{R_{2}}{C_{2}R_{2}s+1},  \infty,  \infty,  \infty,  \infty,  R_{L}\right) \\ = \left(\frac{R_{1}\left(L_{1}s+\frac{1}{C_{1}s}\right)}{L_{1}s+R_{1}+\frac{1}{C_{1}s}},  \frac{R_{2}}{C_{2}R_{2}s+1},  \infty,  \infty,  \infty,  \infty,  \infty,  \infty,  \infty,  $	. 141
10.77 <b>0</b> NVALID-ORDER-770 $Z(s) =$	$\left(\frac{\frac{R_1(L_1s+C_1s)}{L_1s+R_1+\frac{1}{C_1s}}}{\frac{R_2(L_1s+\frac{1}{C_2}R_2s+1)}{R_1(L_1s+\frac{1}{C_1s})}}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, R_L\right) \qquad (8.(L_1s+\frac{1}{C_2s})$	. 141
10.77 <b>I</b> NVALID-ORDER-771 $Z(s) =$	$=\left(rac{R_1\left(L_1s+rac{1}{C_1s} ight)}{L_1s+R_1+rac{1}{C_1s}},\;rac{R_2}{C_2R_2s+1},\;\infty,\;\infty,\;\infty,\;rac{1}{C_Ls} ight)\;\ldots$	. 141

10.77 <b>2</b> NVALID-ORDER-772 $Z(s)=$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}},\right.$	$\frac{R_2}{C_2R_2s+1}, \ \infty,$	$\infty$ , $\infty$ , $\frac{R_L}{C_L R_L s +}$	$_{\overline{1}}$ )		 	 	 	 	 	. 142
10.77\$NVALID-ORDER-773 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}},\right.$	$\frac{R_2}{C_2R_2s+1}, \ \infty,$	$\infty$ , $\infty$ , $R_L + \frac{1}{C}$	$\left(\frac{1}{L^s}\right)$		 	 	 	 	 	. 142
10.774NVALID-ORDER-774 $Z(s)=$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}},\right.$	$\frac{R_2}{C_2R_2s+1}, \ \infty,$	$\infty$ , $\infty$ , $L_L s + \overline{c}$	$\left(\frac{1}{C_L s}\right)$		 	 	 	 	 	. 142
10.77 <b>Б</b> NVALID-ORDER-775 $Z(s)=$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}},\right.$	$\frac{R_2}{C_2R_2s+1}, \ \infty,$	$\infty$ , $\infty$ , $\frac{L_L s}{C_L L_L s^2}$	$\overline{+1}$ )							. 142
10.776NVALID-ORDER-776 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}},\right.$	$\frac{R_2}{C_2R_2s+1}$ , $\infty$ ,	$\infty$ , $\infty$ , $L_L s + I$	$R_L + \frac{1}{C_L s}$		 	 	 	 	 	. 142
10.77¶NVALID-ORDER-777 $Z(s) = \\$	$\left(\frac{R_1\left(L_1s+\frac{1}{C_1s}\right)}{L_1s+R_1+\frac{1}{C_1s}},\right.$	$\frac{R_2}{C_2R_2s+1}, \ \infty,$	$\infty$ , $\infty$ , $\frac{1}{C_L s + \frac{1}{R_L}}$	$\frac{1}{+\frac{1}{L_L s}}$		 	 	 	 	 	. 142
10.77&NVALID-ORDER-778 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}},\right.$	$\frac{R_2}{C_2R_2s+1}, \ \infty,$	$\infty,  \infty,  \frac{L_L s}{C_L L_L s^2 + 1}$	$\overline{+1} + R_L$		 	 	 	 	 	. 142
10.77 <b>9</b> NVALID-ORDER-779 $Z(s) =$	1		$\infty,  \infty,  R_L(L_L s - L_L $	$\frac{+\frac{1}{C_L s}}{+\frac{1}{C_L s}} $ .							. 142
10.78©NVALID-ORDER-780 $Z(s) =$	` /		$(\infty, \infty, \infty, R_L)$ .			 	 	 	 	 	. 143
10.78INVALID-ORDER-781 $Z(s) =$	` ,		$(0, \infty, \infty, \frac{1}{C_L s})$			 	 	 	 	 	. 143
10.78 <b>2</b> NVALID-ORDER-782 $Z(s) =$	C1s		$0, \infty, \infty, \frac{R_L}{C_L R_L s}$	/		 	 	 	 	 	. 143
10.78 <b>&amp;</b> NVALID-ORDER-783 $Z(s) =$			$\infty$ , $\infty$ , $\infty$ , $R_L + \bar{q}$	/		 	 	 	 	 	. 143
10.78\Pinvalid-ORDER-784 $Z(s) =$	CIS		$\infty$ , $\infty$ , $\infty$ , $L_L s +$	/		 	 	 	 	 	. 143
10.78 <b>5</b> NVALID-ORDER-785 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}},\right)$	$R_2 + \frac{1}{C_2 s}, \ \infty$	$0, \infty, \infty, \frac{L_L s}{C_L L_L s^2}$	$\overline{+1}$ )		 	 	 	 	 	. 143
10.786NVALID-ORDER-786 $Z(s) =$			$\infty$ , $\infty$ , $\infty$ , $L_L s +$			 	 	 	 	 	. 143
10.78¶NVALID-ORDER-787 $Z(s) =$	$\left(\frac{R_1(L_1s + C_1s)}{L_1s + R_1 + \frac{1}{C_1s}}, \left(R_1(L_1s + \frac{1}{C_1s})\right)\right)$	$R_2 + \frac{1}{C_2 s}$ , $\infty$	$c$ ), $\infty$ , $\infty$ , $\frac{1}{C_L s + \frac{1}{R}}$	$\left(\frac{1}{L} + \frac{1}{L_L s}\right)$ .		 	 	 	 	 	. 143
10.78\NVALID-ORDER-788 $Z(s) =$	$\left(\frac{R_1(L_1s + C_1s)}{L_1s + R_1 + \frac{1}{C_1s}}, R_1(L_1s + \frac{1}{C_1s})\right)$	$R_2 + \frac{1}{C_2 s}, \ \infty$	$(x, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2})$	$\frac{1}{1+1} + R_L$		 	 	 	 	 	. 144
10.78 <b>9</b> NVALID-ORDER-789 $Z(s) =$	$\left(\frac{\frac{1}{L_1} + \frac{1}{C_1 s}}{\frac{1}{L_1} + \frac{1}{C_1 s}}, \frac{1}{C_1 s}\right)$	$R_2 + \frac{1}{C_2 s}, \ \infty$	$\sum_{l=0}^{\infty} \infty,  \infty,  \frac{\frac{L}{L_L s + R}}{\frac{L}{L_L s + R}}$	$\frac{C_{L^s}}{L + \frac{1}{C_{L^s}}}$		 	 	 	 	 	. 144
10.79 0NVALID-ORDER-790 $Z(s) =$ 10.79 1NVALID-ORDER-791 $Z(s) =$	$\left(\frac{\frac{1}{L_1s + R_1 + \frac{1}{C_1s}}}{\frac{1}{L_1s + \frac{1}{C_1s}}}, \frac{1}{L_1s + \frac{1}{C_1s}}\right)$	$L_2s + \frac{1}{C_2s}$ , o	$\infty, \infty, \infty, R_L$			 	 	 	 	 	. 144
10.792NVALID-ORDER-792 $Z(s) =$ 10.792NVALID-ORDER-793 $Z(s) =$	$\left(\frac{C_{1s}}{L_1s + R_1 + \frac{1}{C_{1s}}}, \left(R_1\left(L_1s + \frac{1}{C_{1s}}\right)\right)\right)$	$L_2s + \frac{1}{C_2s}$ , o	$\infty,  \infty,  \infty,  \frac{R_L}{C_L R_L s}$	$\overline{s+1}$ ) · · ·		 	 	 	 	 	. 144
10.79 INVALID-ORDER-793 $Z(s) =$ 10.79 INVALID-ORDER-794 $Z(s) =$	$\left(\frac{C_1s}{L_1s+R_1+\frac{1}{C_1s}}, \frac{R_1\left(L_1s+\frac{1}{C_1s}\right)}{R_1\left(L_1s+\frac{1}{C_1s}\right)}\right)$	$L_2s + \frac{1}{C_2s}$ , $\circ$	$\infty$ , $\infty$ , $\infty$ , $R_L +$	$\frac{1}{C_L s}$		 	 	 	 	 	. 144
10.794N VALID-ORDER-794 $Z(s) =$	$ \left(\frac{C_{1s}}{L_{1s}+R_{1}+\frac{1}{C_{1s}}}, \frac{C_{1s}}{R_{1}\left(L_{1s}+\frac{1}{C_{1s}}\right)}\right) $	$L_2s + \frac{1}{C_2s}$ , o	$\infty, \ \infty, \ \infty, \ L_L s + \dots$	$\left(\frac{1}{C_L s}\right) \cdot \cdot$		 	 	 	 	 	. 144
10.79 <b>&amp;</b> NVALID-ORDER-795 $Z(s)=$ 10.79 <b>&amp;</b> NVALID-ORDER-796 $Z(s)=$	$ \left(\begin{array}{c} \overline{L_1 s + R_1 + \frac{1}{C_1 s}}, \\ R_1 \left(L_1 s + \frac{1}{C_1 s}\right) \right) $	$L_2s + \frac{1}{C_2s}$ , o	$\infty,  \infty,  \infty,  \frac{DL}{C_L L_L s}$	$\left(\frac{\overline{z_{2}}+1}{z_{2}}\right)$ .	`	 	 	 	 	 	. 144
10.79 IN VALID-ORDER 796 $Z(s) =$	$ \left(\frac{C_1 C_1 C_2}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{C_1 C_1 C_2 C_2}{R_1 \left(L_1 s + \frac{1}{C_1 s}\right)}\right) $	$L_2s + \frac{1}{C_2s}$ , o	$\infty$ , $\infty$ , $\infty$ , $L_L s +$	$K_L + \frac{1}{C_L s}$	)	 	 	 	 	 	. 145
10.79 <b>T</b> NVALID-ORDER-797 $Z(s) =$	$\left(\frac{C_1s}{L_1s+R_1+\frac{1}{C_1s}},\right.$	$L_2s + \frac{1}{C_2s}, \circ$	$\infty$ , $\infty$ , $\infty$ , $\overline{C_L s + \overline{I}_R}$	$\left(\frac{1}{R_L} + \frac{1}{L_L s}\right)$		 	 	 	 	 	. 145

10.79&NVALID-ORDER-798 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \ L_2s + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right) $	145
10.79 <b>9</b> NVALID-ORDER-799 $Z(s)=$	$\left\langle R, \left( I, s + \frac{1}{2} \right) \right\rangle$ $\left\langle R, \left( I, s + \frac{1}{2} \right) \right\rangle$	145
10.80 <b>0</b> NVALID-ORDER-800 $Z(s)=$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \ L_2s + R_2 + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ R_L\right) $	145
10.80INVALID-ORDER-801 $Z(s) =$	$\langle p \mid T \mid T \mid T \rangle$	145
10.802NVALID-ORDER-802 $Z(s) =$	$\left(\begin{array}{ccc}L_1s+L_1+C_1s&&C_2s&&C_2L_2s+1\end{array}\right)$	145
10.80 <b>&amp;</b> NVALID-ORDER-803 $Z(s)=$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \ L_2s + R_2 + \frac{1}{C_2s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_Ls}\right)  \dots $	145
10.80#NVALID-ORDER-804 $Z(s) = $	$\left(\frac{L_{1}+L_{1}+C_{1}s}{C_{1}s}\right)$	146
10.80 <b>5</b> NVALID-ORDER-805 $Z(s) =$	$\left(\begin{array}{cccc} L_{1} + L_{1} + C_{1} s & C_{2} & C_{2} & C_{2} \end{array}\right)$	146
10.80 <b>6</b> NVALID-ORDER-806 $Z(s) =$	$\left(\begin{array}{ccc} E_{10} & E_{11} & E_{12} & E_{22} & E_{23} & E_{24} & E$	146
10.80 TNVALID-ORDER-807 $Z(s) =$	$\left(\begin{array}{cccc} L_{1s} & C_{1s} & C_{2s} & C_{2s} & R_L + L_{Ls} \end{array}\right)$	146
10.80&NVALID-ORDER-808 $Z(s) =$		146
10.80 <b>9</b> NVALID-ORDER-809 $Z(s) =$	$C_{2^{\circ}}$ $C_{2^{\circ}}$ $C_{2^{\circ}}$ $C_{2^{\circ}}$ $C_{2^{\circ}}$ $C_{2^{\circ}}$	146
10.81 <b>0</b> NVALID-ORDER-810 $Z(s) =$	$\left(\begin{array}{ccc} L_1s+L_1+C_2s & C_2L_2s+1 \end{array}\right)$	146
10.81 INVALID-ORDER-811 $Z(s) =$	$\left(\begin{array}{cccccccccccccccccccccccccccccccccccc$	146
10.812NVALID-ORDER-812 $Z(s) =$	$\left(\begin{array}{cccc} L_1 & L_2 & L_3 & L_4 & $	147
10.812NVALID-ORDER-813 $Z(s) =$	$\left(\begin{array}{cccc} L_1 s + L_1 s & C_2 L_2 s & +1 \end{array}\right)$	147
10.81#NVALID-ORDER-814 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)  \dots $	147
10.815NVALID-ORDER-815 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \ \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_Ls}{C_LL_Ls^2 + 1}\right)  \dots $	147
	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right) \dots \dots$	
	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)\right)$	
10.81&NVALID-ORDER-818 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right) \dots \dots$	147
10.81 <b>9</b> NVALID-ORDER-819 $Z(s) =$	$ \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)^{-1} \dots \dots$	147
10.82 <b>0</b> NVALID-ORDER-820 $Z(s) =$	$\left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, R_L\right) \dots \dots$	148
10.82INVALID-ORDER-821 $Z(s) =$	$ \begin{pmatrix} L_{1}s + R_{1} + \frac{1}{C_{1}s}, & L_{2}s + R_{2} + \frac{1}{C_{2}s}, & \infty, & \infty, & \infty, \\ \frac{R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right)}{L_{1}s + R_{1} + \frac{1}{C_{1}s}}, & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, & \infty, & \infty, & \infty, & \frac{1}{C_{L}s} \end{pmatrix} \\ = \begin{pmatrix} R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right), & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, & \infty, & \infty, & \infty, & \frac{R_{L}}{C_{L}R_{L}s + 1} \end{pmatrix} \\ = \begin{pmatrix} R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right), & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, & \infty, & \infty, & \infty, & \frac{R_{L}}{C_{L}R_{L}s + 1} \end{pmatrix} \\ = \begin{pmatrix} R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right), & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, & \infty, & \infty, & \infty, & \frac{R_{L}}{C_{L}R_{L}s + 1} \end{pmatrix} \\ = \begin{pmatrix} R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right), & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, & \infty, & \infty, & \infty, & \frac{R_{L}}{C_{L}R_{L}s + 1} \end{pmatrix} \\ = \begin{pmatrix} R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right), & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, & \infty, & \infty, & \infty, & \infty, & \frac{R_{L}}{C_{L}R_{L}s + 1} \end{pmatrix} \\ = \begin{pmatrix} R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right), & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, & \infty, & \infty, & \infty, & \infty, & \frac{R_{L}}{C_{L}R_{L}s + 1} \end{pmatrix} \\ = \begin{pmatrix} R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right), & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right), & \infty, & \infty, & \infty, & \infty, & \infty, & \frac{R_{L}}{C_{L}R_{L}s + 1} \end{pmatrix} \\ = \begin{pmatrix} R_{1}\left(L_{1}s + \frac{1}{C_{1}s}\right), & \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right), & \infty, & $	148
	$\left(\frac{R_1\left(L_1s+\frac{1}{C_1s}\right)}{L_1s+R_1+\frac{1}{C_1s}}, \frac{R_2\left(L_2s+\frac{1}{C_2s}\right)}{L_2s+R_2+\frac{1}{C_2s}}, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls+1}\right) \qquad \dots $	148
10.82 <b>B</b> NVALID-ORDER-823 $Z(s) =$	$ \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right) \dots \dots$	148

10.82#NVALID-ORDER-824 $Z(s) = \left(\frac{R_1(L_1s)}{L_1s+R_1s}\right)$	$\frac{\frac{1}{C_{1}s}}{\frac{1}{C_{1}s}}, \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, \infty, \infty, \infty, \infty, L_{L}s + \frac{1}{C_{L}s}\right) \qquad .$
10.82\forall NVALID-ORDER-825 $Z(s) = \left(\frac{R_1(L_1s)}{L_1s+R_1s}\right)$	$\frac{1}{C_{1s}} \sum_{L_{2}s+L_{2}+C_{2}s} \sum_{C_{L}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{1}} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s} \left( \frac{1}{C_{2}s} + \frac{1}{C_{2}s} \right) + \frac{1}{C_{2}s} \sum_{L_{2}s+L_{2}+1} \sum_{C_{2}s+L_{2}+1} $
10.826NVALID-ORDER-826 $Z(s) = \left(\frac{R_1 \setminus L_1 s}{L_1 s + R_2}\right)$	$\frac{c_{1s}}{c_{1s}}$ , $\frac{R_2(L_2s + c_{2s})}{L_2s + R_2 + \frac{1}{C_{2s}}}$ , $\infty$
10.82 <b>T</b> NVALID-ORDER-827 $Z(s) = \left(\frac{R_1(L_1s)}{L_1s+R}\right)$	$\frac{1}{C_{1s}}$ , $\frac{R_2(L_2s + \frac{1}{C_2s})}{L_2s + R_2 + \frac{1}{L_2s}}$ , $\infty$
10.82\NVALID-ORDER-828 $Z(s) = \left(\frac{R_1(L_1s)}{L_1s+R_1s}\right)$	$ \frac{1}{\frac{1}{C_{1}s}}, \frac{1}{\frac{1}{C_{1}s}}, \frac{R_{2}\left(L_{2}s + \frac{1}{C_{2}s}\right)}{L_{2}s + R_{2} + \frac{1}{C_{2}s}}, \infty, \infty, \infty, \infty, \frac{L_{L}s}{C_{L}L_{L}s^{2} + 1} + R_{L}\right)$
10.82 <b>9</b> NVALID-ORDER-829 $Z(s) = \left(\frac{R_1(L_1s)}{L_1s+R_1s}\right)$	$\frac{\frac{1}{\hat{c}_{1s}})}{\frac{1}{C_{1s}}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)^{\frac{1}{2}}. \dots $

1 Examined H(z) for TIA some parasitic Z1 Z2 ZL:  $\frac{Z_1Z_L(Z_2g_mr_o+Z_2+r_o)}{Z_1Z_2g_mr_o+Z_1Z_2+Z_1r_o+Z_2Z_L+Z_2r_o+Z_Lr_o}$ 

$$H(z) = \frac{Z_1 Z_L \left( Z_2 g_m r_o + Z_2 + r_o \right)}{Z_1 Z_2 g_m r_o + Z_1 Z_2 + Z_1 r_o + Z_2 Z_L + Z_2 r_o + Z_L r_o}$$

- 2 HP
- 3 BP

**3.1** BP-1 
$$Z(s) = \left(R_1, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{L_L R_1 s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_L L_L R_1 R_2 g_m r_o s^2 + C_L L_L R_1 R_2 s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_2 r_o s^2 + L_L R_2 s + L_L r_o s + R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 r_o}$$

## Parameters:

Q: 
$$\frac{C_L \sqrt{\frac{1}{C_L L_L}} (R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 r_o)}{R_2 + r_o}$$
 wo: 
$$\sqrt{\frac{1}{C_L L_L}}$$
 bandwidth: 
$$\frac{R_2 + r_o}{C_L (R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 r_o)}$$
 K-LP: 0 K-HP: 0 K-BP: 
$$\frac{R_1 (R_2 g_m r_o + R_2 + r_o)}{R_2 + r_o}$$
 Qz: 0 Wz: None

**3.2** BP-2 
$$Z(s) = \left(R_1, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

## Parameters:

$$\begin{array}{l} \text{Q:} \ \frac{C_L R_L \sqrt{\frac{1}{C_L L_L}}}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o} \\ \text{wo:} \ \sqrt{\frac{1}{C_L L_L}} \\ \text{bandwidth:} \ \frac{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o}{C_L R_L (R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 r_o)} \\ \text{K-LP:} \ 0 \\ \text{K-HP:} \ 0 \\ \text{K-BP:} \ \frac{R_1 R_L (R_2 g_m r_o + R_2 + r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o} \\ \text{Qz:} \ 0 \\ \text{Wz:} \ \text{None} \end{array}$$

**3.3** BP-3 
$$Z(s) = \left(L_1 s, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_1 s \left( R_2 g_m r_o + R_2 + r_o \right)}{C_L L_1 R_2 g_m r_o s^2 + C_L L_1 R_2 s^2 + C_L L_1 r_o s^2 + C_L R_2 r_o s + R_2 + r_o}$$

Q: 
$$\frac{L_1\sqrt{\frac{R_2+r_o}{C_LL_1(R_2g_mr_o+R_2+r_o)}}(R_2g_mr_o+R_2+r_o)}{R_2r_o}$$

wo: 
$$\sqrt{\frac{R_2+r_o}{C_LL_1(R_2g_mr_o+R_2+r_o)}}$$
  
bandwidth:  $\frac{R_2r_o}{L_1(R_2g_mr_o+R_2+r_o)}$   
K-LP: 0  
K-HP: 0  
K-BP:  $\frac{L_1(R_2g_mr_o+R_2+r_o)}{C_LR_2r_o}$   
Qz: 0  
Wz: None

**3.4** BP-4 
$$Z(s) = \left(L_1 s, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{L_1 R_L s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_L L_1 R_2 R_L g_m r_o s^2 + C_L L_1 R_2 R_L s^2 + C_L L_1 R_L r_o s^2 + C_L R_2 R_L r_o s + L_1 R_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + R_2 R_L + R_2 r_o + R_L r_o}$$

$$\begin{array}{l} \text{Q:} \ \frac{C_L L_1 R_L \sqrt{\frac{R_2 R_L + R_2 r_o + R_L r_o}{C_L L_1 R_L (R_2 g_m r_o + R_2 + r_o)}} (R_2 g_m r_o + R_2 + r_o)}{C_L R_2 R_L r_o + L_1 R_2 g_m r_o + L_1 R_2 + L_1 r_o} \\ \text{wo:} \ \sqrt{\frac{R_2 R_L + R_2 r_o + R_L r_o}{C_L L_1 R_L (R_2 g_m r_o + R_2 + r_o)}} \\ \text{bandwidth:} \ \frac{C_L R_2 R_L r_o + L_1 R_2 g_m r_o + L_1 R_2 + L_1 r_o}{C_L L_1 R_L (R_2 g_m r_o + R_2 + r_o)} \\ \text{K-LP:} \ 0 \\ \text{K-HP:} \ 0 \\ \text{K-BP:} \ \frac{L_1 R_L (R_2 g_m r_o + R_2 + r_o)}{C_L R_2 R_L r_o + L_1 R_2 g_m r_o + L_1 R_2 + L_1 r_o} \\ \text{Qz:} \ 0 \\ \text{Wz:} \ \text{None} \end{array}$$

**3.5** BP-5 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{L_1 R_L s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 L_1 R_2 R_L s^2 + C_1 L_1 R_2 r_o s^2 + C_1 L_1 R_L r_o s^2 + L_1 R_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + R_2 R_L + R_2 r_o + R_L r_o}$$

#### Parameters:

Q: 
$$\frac{C_1\sqrt{\frac{1}{C_1L_1}}(R_2R_L+R_2r_o+R_Lr_o)}{R_2g_mr_o+R_2+r_o}$$
 wo: 
$$\sqrt{\frac{1}{C_1L_1}}$$
 bandwidth: 
$$\frac{R_2g_mr_o+R_2+r_o}{C_1(R_2R_L+R_2r_o+R_Lr_o)}$$
 K-LP: 0 K-HP: 0 K-BP:  $R_L$  Qz: 0 Wz: None

**3.6 BP-6** 
$$Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{L_1 R_1 R_L s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 L_1 R_1 R_2 R_L s^2 + C_1 L_1 R_1 R_2 r_o s^2 + C_1 L_1 R_1 R_L r_o s^2 + L_1 R_1 R_2 g_m r_o s + L_1 R_1 R_2 s + L_1 R_1 r_o s + L_1 R_2 r_o s + L_1 R_1 r_o s + R_1 R_2 R_L s + L_1 R_2 r_o s + R_1 R_2 R_L s + R_1 R_2 r_o s + R_$$

Q: 
$$\frac{C_1R_1\sqrt{\frac{1}{C_1L_1}}(R_2R_L+R_2r_o+R_Lr_o)}{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o}$$
 wo: 
$$\sqrt{\frac{1}{C_1L_1}}$$
 bandwidth: 
$$\frac{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o}{C_1R_1(R_2R_L+R_2r_o+R_Lr_o)}$$

K-LP: 0 K-HP: 0

K-BP:  $\frac{R_1 R_L (R_2 g_m r_o + R_2 + r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o}$ 

Qz: 0 Wz: None

## 4 LP

**4.1** LP-1 
$$Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{R_L \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L R_2 R_L r_o s^2 + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + C_L R_2 R_L g_m r_o s + C_L R_2 R_L s + C_L R_L r_o s + R_2 g_m r_o + R_2 + r_o}$$

## Parameters:

Q:  $\frac{C_{1}C_{L}R_{2}R_{L}r_{o}\sqrt{\frac{R_{2}g_{m}r_{o}+R_{2}+r_{o}}{C_{1}C_{L}R_{2}R_{L}r_{o}}}}{C_{1}R_{2}R_{L}+C_{1}R_{2}r_{o}+C_{1}R_{L}r_{o}+C_{L}R_{2}R_{L}g_{m}r_{o}+C_{L}R_{2}R_{L}+C_{L}R_{L}r_{o}}}$  wo:  $\sqrt{\frac{R_{2}g_{m}r_{o}+R_{2}+r_{o}}{C_{1}C_{L}R_{2}R_{L}+c_{o}}}}$  bandwidth:  $\frac{C_{1}R_{2}R_{L}+C_{1}R_{2}r_{o}+C_{1}R_{L}r_{o}+C_{L}R_{2}R_{L}g_{m}r_{o}+C_{L}R_{2}R_{L}+C_{L}R_{L}r_{o}}{C_{1}C_{L}R_{2}R_{L}r_{o}}}$ K-LP:  $R_L$ K-HP: 0 K-BP: 0 Qz: None Wz: None

**4.2** LP-2 
$$Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L R_1 R_2 r_o s^2 + C_1 R_1 R_2 s + C_1 R_1 r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + R_2 + r_o}$$

## Parameters:

 $\text{Q: } \frac{C_1C_LR_1R_2r_o\sqrt{\frac{R_2+r_o}{C_1C_LR_1R_2r_o}}}{C_1R_1R_2+C_1R_1r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2r_o}$ wo:  $\sqrt{\frac{R_2 + r_o}{C_1 C_L R_1 R_2 r_o}}$ bandwidth:  $\frac{C_1 R_1 R_2 + C_1 R_1 r_o + C_L R_1 R_2 g_m r_o + C_L R_1 R_2 + C_L R_1 r_o + C_L R_2 r_o}{C_1 C_L R_1 R_2 r_o}$ 

K-LP:  $\frac{R_1(R_2g_mr_o+R_2+r_o)}{R_2+r_o}$ 

K-HP: 0 K-BP: 0 Qz: None Wz: None

**4.3** LP-3 
$$Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{R_{1}R_{L}\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{L}R_{1}R_{2}R_{L}s + C_{1}R_{1}R_{2}r_{o}s + C_{1}R_{1}R_{L}r_{o}s + C_{L}R_{1}R_{2}R_{L}s + C_{L}R_{1}R_{2}R_{L}s + C_{L}R_{1}R_{2}R_{L}s + C_{L}R_{1}R_{L}r_{o}s + C_{L}R_{1}R_{L}$$

$$\begin{aligned} &\mathbf{Q} \colon \frac{C_{1}C_{L}R_{1}R_{2}R_{L}r_{o}\sqrt{\frac{R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o}}{C_{1}C_{L}R_{1}R_{2}R_{L}+C_{1}R_{1}R_{2}r_{o}+C_{1}R_{1}R_{L}r_{o}+C_{L}R_{1}R_{2}R_{L}g_{m}r_{o}+C_{L}R_{1}R_{2}R_{L}+C_{L}R_{1}R_{L}r_{o}+C_{L}R_{2}R_{L}r_{o}}}\\ &\mathbf{WO:} \ \sqrt{\frac{R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o}}{C_{1}C_{L}R_{1}R_{2}R_{L}r_{o}+C_{L}R_{1}R_{2}R_{L}r_{o}}}} \end{aligned}$$

## 5 BS

**5.1** BS-1 
$$Z(s) = \left(R_1, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_L L_L R_2 s^2 + C_L L_L r_o s^2 + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + R_2 + r_o r_o r_o s}$$

#### Parameters:

$$\begin{aligned} &\text{Q: } \frac{L_L \sqrt{\frac{1}{C_L L_L}} (R_2 + r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 r_o} \\ &\text{wo: } \sqrt{\frac{1}{C_L L_L}} \\ &\text{bandwidth: } \frac{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 r_o}{L_L (R_2 + r_o)} \\ &\text{K-LP: } \frac{R_1 (R_2 g_m r_o + R_2 + r_o)}{R_2 + r_o} \\ &\text{K-HP: } \frac{R_1 (R_2 g_m r_o + R_2 + r_o)}{R_2 + r_o} \\ &\text{K-BP: 0} \\ &\text{Qz: None} \\ &\text{Wz: } \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

**5.2** BS-2 
$$Z(s) = \left(R_1, R_2, \infty, \infty, \infty, \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{R_1 R_L \left( C_L L_L s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_L L_L R_1 R_2 g_m r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L R_1 R_2 R_L g_m r_o s + C_L R_1 R_2 R_L r_o s + R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_1 R_2 r_o s^2 + C_L R_1 R_2$$

## Parameters:

$$\begin{array}{l} \text{Q:} \ \frac{L_L\sqrt{\frac{1}{C_LL_L}}(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)}{R_L(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2r_o)} \\ \text{wo:} \ \sqrt{\frac{1}{C_LL_L}} \\ \text{bandwidth:} \ \frac{R_L(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2r_o)}{L_L(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)} \\ \text{K-LP:} \ \frac{R_1R_L(R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ \text{K-HP:} \ \frac{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ \text{K-BP:} \ 0 \\ \text{Qz:} \ \text{None} \\ \text{Wz:} \ \sqrt{\frac{1}{C_LL_L}} \end{array}$$

**5.3** BS-3 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 L_1 R_2 g_m r_o s^2 + C_1 L_1 R_2 s^2 + C_1 L_1 r_o s^2 + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + R_2 g_m r_o + R_2 + r_o}$$

$$\begin{array}{l} \text{Q:} \ \frac{L_1\sqrt{\frac{1}{C_1L_1}}(R_2g_mr_o + R_2 + r_o)}{R_2R_L + R_2r_o + R_Lr_o} \\ \text{wo:} \ \sqrt{\frac{1}{C_1L_1}} \\ \text{bandwidth:} \ \frac{R_2R_L + R_2r_o + R_Lr_o}{L_1(R_2g_mr_o + R_2 + r_o)} \\ \text{K-LP:} \ R_L \\ \text{K-HP:} \ R_L \\ \text{K-BP:} \ 0 \\ \text{Qz:} \ \text{None} \\ \text{Wz:} \ \sqrt{\frac{1}{C_1L_1}} \end{array}$$

**5.4** BS-4 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2, \infty, \infty, \infty, R_L\right)$$

$$\begin{aligned} & \text{Q:} \ \frac{L_1\sqrt{\frac{1}{C_1L_1}}(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)}{R_1(R_2R_L + R_2r_o + R_Lr_o)} \\ & \text{wo:} \ \sqrt{\frac{1}{C_1L_1}} \\ & \text{bandwidth:} \ \frac{R_1(R_2R_L + R_2r_o + R_Lr_o)}{L_1(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)} \\ & \text{K-LP:} \ \frac{R_1R_L(R_2g_mr_o + R_2 + R_2r_o + R_Lr_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ & \text{K-HP:} \ \frac{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ & \text{K-BP:} \ 0 \\ & \text{Qz:} \ \text{None} \\ & \text{Wz:} \ \sqrt{\frac{1}{C_1L_1}} \end{aligned}$$

## 6 **GE**

**6.1 GE-1** 
$$Z(s) = \left(R_1, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_L L_L R_2 s^2 + C_L L_L r_o s^2 + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_L r_o s + R_2 + r_o}$$

$$\begin{aligned} & Q \colon \frac{L_L \sqrt{\frac{1}{C_L L_L}} (R_2 + r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o} \\ & \text{wo: } \sqrt{\frac{1}{C_L L_L}} \\ & \text{bandwidth: } \frac{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o}{L_L (R_2 + r_o)} \\ & \text{K-LP: } \frac{R_1 (R_2 g_m r_o + R_2 + r_o)}{R_2 + r_o} \\ & \text{K-HP: } \frac{R_1 (R_2 g_m r_o + R_2 + r_o)}{R_2 + r_o} \\ & \text{K-BP: } \frac{R_1 R_L (R_2 g_m r_o + R_2 + r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o} \\ & \text{Qz: } \frac{L_L \sqrt{\frac{1}{C_L L_L}}}{R_L} \\ & \text{Wz: } \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

**6.2** GE-2 
$$Z(s) = \left(R_1, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$\begin{aligned} &\text{Q:} \ \frac{C_L \sqrt{\frac{1}{C_L L_L}}}{R_2 + L} (R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o)}{R_2 + r_o} \\ &\text{wo:} \ \sqrt{\frac{1}{C_L L_L}} \\ &\text{bandwidth:} \ \frac{R_2 + r_o}{C_L (R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o)} \\ &\text{K-LP:} \ \frac{R_1 R_L (R_2 g_m r_o + R_2 + r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o} \\ &\text{K-HP:} \ \frac{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o} \\ &\text{K-BP:} \ \frac{R_1 (R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o)}{R_2 + r_o} \\ &\text{Qz:} \ C_L R_L \sqrt{\frac{1}{C_L L_L}} \\ &\text{Wz:} \ \sqrt{\frac{1}{C_L L_L}} \end{aligned}$$

**6.3** GE-3 
$$Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$$

#### Parameters:

Q: 
$$\frac{L_2\sqrt{\frac{1}{C_2L_2}}(R_1g_mr_o + R_1 + R_L + r_o)}{r_o(R_1 + R_L)}$$
 wo: 
$$\sqrt{\frac{1}{C_2L_2}}$$
 bandwidth: 
$$\frac{r_o(R_1 + R_L)}{L_2(R_1g_mr_o + R_1 + R_L + r_o)}$$
 K-LP: 
$$\frac{R_1R_L(g_mr_o + 1)}{R_1g_mr_o + R_1 + R_L + r_o}$$
 K-HP: 
$$\frac{R_1R_L(g_mr_o + 1)}{R_1g_mr_o + R_1 + R_L + r_o}$$
 K-BP: 
$$\frac{R_1R_L}{R_1 + R_L}$$
 Qz: 
$$\frac{L_2\sqrt{\frac{1}{C_2L_2}}(g_mr_o + 1)}{r_o}$$
 Wz: 
$$\sqrt{\frac{1}{C_2L_2}}$$

**6.4** GE-4 
$$Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$$

$$\begin{aligned} & \text{Q: } \frac{L_2\sqrt{\frac{1}{C_2L_2}}(R_1g_mr_o + R_1 + R_L + r_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ & \text{wo: } \sqrt{\frac{1}{C_2L_2}} \\ & \text{bandwidth: } \frac{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o}{L_2(R_1g_mr_o + R_1 + R_L + r_o)} \\ & \text{K-LP: } \frac{R_1R_L(g_mr_o + 1)}{R_1g_mr_o + R_1 + R_L + r_o} \\ & \text{K-HP: } \frac{R_1R_L(g_mr_o + 1)}{R_1g_mr_o + R_1 + R_L + r_o} \\ & \text{K-BP: } \frac{R_1R_L(g_mr_o + 1)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ & \text{Qz: } \frac{L_2\sqrt{\frac{1}{C_2L_2}}(g_mr_o + 1)}{R_2g_mr_o + R_2 + r_o} \end{aligned}$$

Wz: 
$$\sqrt{\frac{1}{C_2L_2}}$$

**6.5 GE-5** 
$$Z(s) = \left(R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{R_1 R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 L_2 R_1 R_2 g_m r_o s^2 + C_2 L_2 R_1 r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_1 r_o s^2 + L_2 R_1 g_m r_o s + L_2 R_1 s + L_2 R_1 s + L_2 r_o s + R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o }$$

$$\begin{aligned} & \text{Q:} \ \frac{C_2\sqrt{\frac{1}{C_2L_2}}(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)}{R_1g_mr_o + R_1 + R_L + r_o} \\ & \text{wo:} \ \sqrt{\frac{1}{C_2L_2}} \\ & \text{bandwidth:} \ \frac{R_1g_mr_o + R_1 + R_L + r_o}{C_2(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)} \\ & \text{K-LP:} \ \frac{R_1R_L(R_2g_mr_o + R_2 + r_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ & \text{K-HP:} \ \frac{R_1R_L(R_2g_mr_o + R_2R_L + R_2r_o + R_Lr_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ & \text{K-BP:} \ \frac{R_1R_L(g_mr_o + 1)}{R_1g_mr_o + R_1 + R_L + r_o} \\ & \text{Qz:} \ \frac{C_2\sqrt{\frac{1}{C_2L_2}}(R_2g_mr_o + R_2 + r_o)}{g_mr_o + 1} \\ & \text{Wz:} \ \sqrt{\frac{1}{C_2L_2}} \end{aligned}$$

**6.6 GE-6** 
$$Z(s) = \left(R_1, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L\right)$$

## Parameters:

$$\begin{aligned} & \text{Q:} \ \frac{L_2\sqrt{\frac{1}{C_2L_2}}(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)}{R_2r_o(R_1 + R_L)} \\ & \text{wo:} \ \sqrt{\frac{1}{C_2L_2}} \\ & \text{bandwidth:} \ \frac{R_2r_o(R_1 + R_L)}{L_2(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)} \\ & \text{K-LP:} \ \frac{R_1R_L(R_2g_mr_o + R_2 + r_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ & \text{K-HP:} \ \frac{R_1R_L(R_2g_mr_o + R_2 + r_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ & \text{K-BP:} \ \frac{R_1R_L}{R_1 + R_L} \\ & \text{Qz:} \ \frac{L_2\sqrt{\frac{1}{C_2L_2}}(R_2g_mr_o + R_2 + r_o)}{R_2r_o}}{R_2r_o} \\ & \text{Wz:} \ \sqrt{\frac{1}{C_2L_2}} \end{aligned}$$

**6.7** GE-7 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 L_1 R_2 g_m r_o s^2 + C_1 L_1 R_2 s^2 + C_1 L_1 r_o s^2 + C_1 R_1 R_2 g_m r_o s + C_1 R_1 R_2 s + C_1 R_1 r_o s + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + R_2 g_m r_o + R_2 + r_o}$$

Q: 
$$\frac{L_1\sqrt{\frac{1}{C_1L_1}}(R_2g_mr_o + R_2 + r_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o}$$
 wo: 
$$\sqrt{\frac{1}{C_1L_1}}$$
 bandwidth: 
$$\frac{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o}{L_1(R_2g_mr_o + R_2 + r_o)}$$
 K-LP:  $R_L$  K-HP:  $R_L$ 

K-BP: 
$$\frac{R_1 R_L (R_2 g_m r_o + R_2 + r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o}$$
Qz: 
$$\frac{L_1 \sqrt{\frac{1}{C_1 L_1}}}{R_1}$$
Wz: 
$$\sqrt{\frac{1}{C_1 L_1}}$$

**6.8** GE-8 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, R_L\right)$$

### Parameters:

$$\begin{aligned} &\text{Q:} \ \frac{C_1\sqrt{\frac{1}{C_1L_1}}(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)}{R_2g_mr_o + R_2 + r_o} \\ &\text{wo:} \ \sqrt{\frac{1}{C_1L_1}} \\ &\text{bandwidth:} \ \frac{R_2g_mr_o + R_2 + r_o}{C_1(R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)} \\ &\text{K-LP:} \ \frac{R_1R_L(R_2g_mr_o + R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o)}{R_1R_L(R_2g_mr_o + R_2R_L + R_2r_o + R_Lr_o)} \\ &\text{K-HP:} \ \frac{R_1R_L(R_2g_mr_o + R_2R_L + R_2r_o + R_Lr_o)}{R_1R_2g_mr_o + R_1R_2 + R_1r_o + R_2R_L + R_2r_o + R_Lr_o} \\ &\text{K-BP:} \ R_L \\ &\text{Qz:} \ C_1R_1\sqrt{\frac{1}{C_1L_1}} \end{aligned}$$

### 7 AP

### 8 INVALID-NUMER

8.1 INVALID-NUMER-1  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L R_1 r_o s^2 + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

### Parameters:

$$\begin{aligned} &\text{Q: } \frac{C_2C_LR_1r_o\sqrt{\frac{1}{C_2C_LR_1r_o}}}{C_2r_o + C_LR_1g_mr_o + C_LR_1 + C_Lr_o} \\ &\text{wo: } \sqrt{\frac{1}{C_2C_LR_1r_o}} \\ &\text{bandwidth: } \frac{C_2r_o + C_LR_1g_mr_o + C_LR_1 + C_Lr_o}{C_2C_LR_1r_o} \\ &\text{K-LP: } R_1\left(g_mr_o + 1\right) \\ &\text{K-HP: } 0 \\ &\text{K-BP: } \frac{C_2R_1r_o}{C_2r_o + C_LR_1g_mr_o + C_LR_1 + C_Lr_o} \\ &\text{Qz: } 0 \\ &\text{Wz: None} \end{aligned}$$

8.2 INVALID-NUMER-2  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_{1}R_{L}\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}R_{1}R_{L}r_{o}s^{2} + C_{2}R_{1}r_{o}s + C_{L}R_{1}R_{L}g_{m}r_{o}s + C_{L}R_{1}R_{L}s + C_{L}R_{L}r_{o}s + R_{1}g_{m}r_{o} + R_{1} + R_{L} + r_{o}}$$

# 8.3 INVALID-NUMER-3 $Z(s) = \left(R_1, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_1 \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L R_1 R_2 r_o s^2 + C_2 R_2 r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + R_2 + r_o}$$

### Parameters:

$$\begin{array}{c} C_2C_LR_1R_2r_o\sqrt{\frac{R_2+r_o}{C_2C_LR_1R_2r_o}}}\\ \text{Q:} \ \frac{C_2R_2r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2r_o}{C_2C_LR_1R_2r_o}\\ \text{wo:} \ \sqrt{\frac{R_2+r_o}{C_2C_LR_1R_2r_o}}\\ \text{bandwidth:} \ \frac{C_2R_2r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2r_o}{C_2C_LR_1R_2r_o}\\ \text{K-LP:} \ \frac{R_1(R_2g_mr_o+R_2+r_o)}{R_2+r_o}\\ \text{K-HP:} \ 0\\ \text{K-BP:} \ \frac{C_2R_1R_2r_o}{C_2R_2r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2r_o}\\ \text{Qz:} \ 0\\ \text{Wz:} \ \text{None} \end{array}$$

## 8.4 INVALID-NUMER-4 $Z(s) = \left(R_1, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls+1}\right)$

### Parameters:

Parameters: 
$$\begin{aligned} &\text{Q:} \ \frac{C_2C_LR_1R_2R_Lr_o\sqrt{\frac{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o}{C_2C_LR_1R_2R_Lr_o}}}{C_2R_1R_2r_o+C_2R_2R_Lr_o+C_LR_1R_2R_Lg_mr_o+C_LR_1R_2R_Lr_o}} \\ &\text{wo:} \ \sqrt{\frac{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o}{C_2C_LR_1R_2R_Lr_o}}} \\ &\text{bandwidth:} \ \frac{C_2R_1R_2r_o+C_2R_2R_Lr_o+C_LR_1R_2R_Lg_mr_o+C_LR_1R_2R_L+C_LR_1R_Lr_o+C_LR_2R_Lr_o}{C_2C_LR_1R_2R_Lr_o}}{C_2C_LR_1R_2R_Lr_o} \\ &\text{K-LP:} \ \frac{R_1R_L(R_2g_mr_o+R_2+r_o)}{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o}}{C_2R_1R_2R_Lr_o} \\ &\text{K-BP:} \ \frac{C_2R_1R_2r_o+C_2R_2R_Lr_o+C_LR_1R_2R_Lr_o}{C_2R_1R_2R_Lr_o}}{C_2R_1R_2R_Lr_o+C_LR_1R_2R_L+C_LR_1R_Lr_o+C_LR_2R_Lr_o} \\ &\text{Wz:} \ \text{None} \end{aligned}$$

# 8.5 INVALID-NUMER-5 $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$

$$H(s) = \frac{R_1 \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 R_2 s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_2 r_o s^2 + C_2 R_2 s + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

$$\text{Q: } \frac{C_2C_L\sqrt{\frac{1}{C_2C_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}}(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}{C_2R_2+C_2r_o+C_LR_1g_mr_o+C_LR_1+C_Lr_o}$$

```
wo: \sqrt{\frac{1}{C_2C_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}}
bandwidth: \frac{C_2R_2+C_2r_o+C_LR_1g_mr_o+C_LR_1+C_Lr_o}{C_2C_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}
K-LP: R_1 (g_mr_o+1)
K-HP: 0
K-BP: \frac{C_2R_1(R_2g_mr_o+R_2+r_o)}{C_2R_2+C_2r_o+C_LR_1g_mr_o+C_LR_1+C_Lr_o}
Qz: 0
```

8.6 INVALID-NUMER-6  $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_1 R_L \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_L r_o s^2 + C_2 C_L R_2 R_L r_o s^2 + C_2 R_1 R_2 g_m r_o s + C_2 R_1 R_2 s + C_2 R_1 r_o s + C_2 R_2 r_o s + C_2 R_1 r_o s$$

### Parameters:

$$\begin{array}{l} \text{Q:} \ \frac{C_2C_LR_L\sqrt{\frac{R_1g_mr_o+R_1+R_L+r_o}{C_2C_LR_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}}(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}{C_2R_1R_2g_mr_o+C_2R_1R_2+C_2R_1r_o+C_2R_2R_L+C_2R_2r_o+C_2R_Lr_o+C_LR_1R_Lg_mr_o+C_LR_1R_L+C_LR_Lr_o}\\ \text{wo:} \ \sqrt{\frac{R_1g_mr_o+R_1+R_L+r_o}{C_2C_LR_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}}\\ \text{bandwidth:} \ \frac{C_2R_1R_2g_mr_o+C_2R_1R_2+C_2R_1r_o+C_2R_2R_L+C_2R_2r_o+C_2R_Lr_o+C_LR_1R_Lg_mr_o+C_LR_1R_L+C_LR_Lr_o}{C_2C_LR_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}\\ \text{K-LP:} \ \frac{R_1R_L(g_mr_o+1)}{R_1g_mr_o+R_1+R_L+r_o}\\ \text{K-HP:} \ 0 \\ \text{K-BP:} \ \frac{C_2R_1R_2g_mr_o+C_2R_1R_2+C_2R_2r_o+C_2R_Lr_o+C_LR_1R_Lg_mr_o+C_LR_1R_L+C_LR_Lr_o}{C_2C_1R_L(R_2g_mr_o+R_2+r_o)}\\ \text{Qz:} \ 0 \\ \text{Wz:} \ \text{None} \end{array}$$

8.7 INVALID-NUMER-7  $Z(s) = \left(L_1 s, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}R_{L}s + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}r_{o}s^{2} + C_{L}R_{2}R_{L}s + C_{L}R_{2}r_{o}s + C_{L}R_{L}r_{o}s + R_{2} + r_{o}}$$

### Parameters:

$$\begin{array}{l} \text{Q:} \ \frac{L_1\sqrt{\frac{R_2+r_o}{C_LL_1(R_2g_mr_o+R_2+r_o)}}(R_2g_mr_o+R_2+r_o)}{R_2R_L+R_2r_o+R_Lr_o} \\ \text{wo:} \ \sqrt{\frac{R_2+r_o}{C_LL_1(R_2g_mr_o+R_2+r_o)}} \\ \text{bandwidth:} \ \frac{R_2R_L+R_2r_o+R_Lr_o}{L_1(R_2g_mr_o+R_2+r_o)} \\ \text{K-LP:} \ 0 \\ \text{K-HP:} \ R_L \\ \text{K-BP:} \ \frac{L_1(R_2g_mr_o+R_2+r_o)}{C_L(R_2R_L+R_2r_o+R_Lr_o)} \\ \text{Qz:} \ C_LR_L\sqrt{\frac{R_2+r_o}{C_LL_1(R_2g_mr_o+R_2+r_o)}} \\ \text{Wz:} \ \text{None} \end{array}$$

8.8 INVALID-NUMER-8  $Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{L_{1}R_{L}s\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}L_{1}r_{o}s^{2} + C_{2}R_{L}r_{o}s + L_{1}g_{m}r_{o}s + L_{1}s + R_{L} + r_{o}}$$

Q: 
$$\frac{C_{2}L_{1}r_{o}\sqrt{\frac{R_{L}+r_{o}}{C_{2}L_{1}r_{o}}}}{C_{2}R_{L}r_{o}+L_{1}g_{m}r_{o}+L_{1}}$$
wo: 
$$\sqrt{\frac{R_{L}+r_{o}}{C_{2}L_{1}r_{o}}}$$
bandwidth: 
$$\frac{C_{2}R_{L}r_{o}+L_{1}g_{m}r_{o}+L_{1}}{C_{2}L_{1}r_{o}}$$

K-LP: 0

 $\begin{array}{l} \text{K-HP: } R_L \\ \text{K-BP: } \frac{L_1 R_L (g_m r_o + 1)}{C_2 R_L r_o + L_1 g_m r_o + L_1} \\ \text{Qz: } \frac{C_2 r_o \sqrt{\frac{R_L + r_o}{C_2 L_1 r_o}}}{g_m r_o + 1} \\ \text{Wz: None} \end{array}$ 

8.9 INVALID-NUMER-9  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{L_1 R_L s \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 L_1 R_2 r_o s^2 + C_2 R_2 R_L r_o s + L_1 R_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + R_2 R_L + R_2 r_o + R_L r_o}$$

### Parameters:

 $\begin{aligned} &\text{Q: } \frac{C_2L_1R_2r_o\sqrt{\frac{R_2R_L+R_2r_o+R_Lr_o}{C_2L_1R_2r_o}}}{C_2R_2R_Lr_o+L_1R_2g_mr_o+L_1R_2+L_1r_o} \\ &\text{wo: } \sqrt{\frac{R_2R_L+R_2r_o+R_Lr_o}{C_2L_1R_2r_o}} \\ &\text{bandwidth: } \frac{C_2R_2R_Lr_o+L_1R_2g_mr_o+L_1R_2+L_1r_o}{C_2L_1R_2r_o} \end{aligned}$ 

K-LP: 0

 $\begin{array}{l} \text{K-HF: } G \\ \text{K-HP: } R_L \\ \text{K-BP: } \frac{L_1 R_L (R_2 g_m r_o + R_2 + r_o)}{C_2 R_2 R_L r_o + L_1 R_2 g_m r_o + L_1 R_2 + L_1 r_o} \\ \text{Qz: } \frac{C_2 R_2 r_o \sqrt{\frac{R_2 R_L + R_2 r_o + R_L r_o}{C_2 L_1 R_2 r_o}}}{R_2 g_m r_o + R_2 + r_o} \\ \text{Wz: None} \end{array}$ 

8.10 INVALID-NUMER-10  $Z(s) = \left(L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{L_1 R_L s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_2 L_1 R_2 g_m r_o s^2 + C_2 L_1 R_2 s^2 + C_2 L_1 r_o s^2 + C_2 R_2 R_L s + C_2 R_2 r_o s + C_2 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o}$$

### Parameters:

 $\mathrm{Q:}\ \frac{{{C_2}{L_1}}\sqrt {\frac{{{R_L} + {r_o}}}{{{C_2}{R_1}({R_2}{g_m}{r_o} + {R_2} + {r_o})}}}({R_2}{g_m}{r_o} + {R_2} + {r_o})}{{{C_2}{R_2}{R_L} + {C_2}{R_2}{r_o} + {C_2}{R_L}{r_o} + {L_1}{g_m}{r_o} + {L_1}}}$ wo:  $\sqrt{\frac{R_L + r_o}{C_2 L_1 (R_2 g_m r_o + R_2 + r_o)}}$ bandwidth:  $\frac{C_2 R_2 R_L + C_2 R_2 r_o + C_2 R_L r_o + L_1 g_m r_o + L_1}{C_2 L_1 (R_2 g_m r_o + R_2 + r_o)}$ 

K-LP: 0

K-BP:  $\frac{L_1R_L(g_mr_o+1)}{C_2R_2R_L+C_2R_2r_o+C_2R_Lr_o+L_1g_mr_o+L_1}$  Qz:  $\frac{C_2\sqrt{\frac{R_L+r_o}{C_2L_1(R_2g_mr_o+R_2+r_o)}}(R_2g_mr_o+R_2+r_o)}{g_mr_o+1}$  Wz: None

8.11 INVALID-NUMER-11  $Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_L (C_2 r_o s + g_m r_o + 1)}{C_1 C_2 R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 r_o s + g_m r_o + 1}$$

### Parameters:

Q:  $\frac{C_1 C_2 R_L r_o \sqrt{\frac{g_m r_o + 1}{C_1 C_2 R_L r_o}}}{C_1 R_L + C_1 r_o + C_2 r_o}$ bandwidth:  $\frac{C_1R_L + C_1r_o + C_2r_o}{C_1C_2R_Lr_o}$ K-LP:  $R_L$ 

K-HP: 0

K-BP:  $\frac{C_2R_Lr_o}{C_1R_L + C_1r_o + C_2r_o}$ 

Qz: 0 Wz: None

# 8.12 INVALID-NUMER-12 $Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{R_L \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 R_L r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 C_L R_L r_o s^2 + C_2 r_o s + C_L R_L g_m r_o s + C_L R_L s + g_m r_o + 1}$$

### Parameters:

 $\frac{R_L r_o \sqrt{\frac{g_m r_o + 1}{R_L r_o \left(C_1 C_2 + C_1 C_L + C_2 C_L\right)}} \left(C_1 C_2 + C_1 C_L + C_2 C_L\right)}{C_1 R_L + C_1 r_o + C_2 r_o + C_L R_L g_m r_o + C_L R_L}$ bandwidth:  $\frac{C_1R_L+C_1r_o+C_2r_o+C_LR_Lg_mr_o+C_LR_L}{R_Lr_o(C_1C_2+C_1C_L+C_2C_L)}$ 

K-LP:  $R_L$ K-HP: 0

K-BP:  $\frac{C_2R_Lr_o}{C_1R_L+C_1r_o+C_2r_o+C_LR_Lg_mr_o+C_LR_L}$ 

Qz: 0 Wz: None

# 8.13 INVALID-NUMER-13 $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$

$$H(s) = \frac{R_L \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 R_2 R_L r_o s^2 + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o}$$

### Parameters:

Q:  $\frac{C_1C_2R_2R_Lr_o\sqrt{\frac{R_2g_mr_o+R_2+r_o}{C_1C_2R_2R_Lr_o}}}{C_1R_2R_L+C_1R_2r_o+C_1R_Lr_o+C_2R_2r_o}$ wo:  $\sqrt{\frac{R_2g_mr_o+R_2+r_o}{C_1C_2R_2R_Lr_o}}$ bandwidth:  $\frac{C_1R_2R_L+C_1R_2r_o+C_1R_Lr_o+C_2R_2r_o}{C_1C_2R_2R_Lr_o}$ 

K-LP:  $R_L$ K-HP: 0

K-BP:  $\frac{C_2R_2R_Lr_o}{C_1R_2R_L+C_1R_2r_o+C_1R_Lr_o+C_2R_2r_o}$ 

Qz: 0 Wz: None

# 8.14 INVALID-NUMER-14 $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{R_L \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 R_2 R_L r_o s^2 + C_1 C_L R_2 R_L r_o s^2 + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + C_2 C_L R_2 R_L r_o s^2 + C_2 R_2 r_o s + C_L R_2 R_L g_m r_o s + C_L R_2 R_L s + C_L R_L r_o s + R_2 g_m r_o + R_2 + r_o \right)}$$

$$\begin{array}{l} \text{Q:} & \frac{R_2 R_L r_o \sqrt{\frac{R_2 g_m r_o + R_2 + r_o}{R_2 R_L r_o (C_1 C_2 + C_1 C_L + C_2 C_L)}}}{C_1 R_2 R_L + C_1 R_2 r_o + C_1 R_L r_o + C_2 R_2 r_o + C_L R_2 R_L g_m r_o + C_L R_2 R_L + C_L R_L r_o} \\ \text{wo:} & \sqrt{\frac{R_2 g_m r_o + R_2 + r_o}{R_2 R_L r_o (C_1 C_2 + C_1 C_L + C_2 C_L)}}} \\ \text{bandwidth:} & \frac{C_1 R_2 R_L + C_1 R_2 r_o + C_1 R_L r_o + C_2 R_2 r_o + C_L R_2 R_L g_m r_o + C_L R_2 R_L + C_L R_L r_o}{R_2 R_L r_o (C_1 C_2 + C_1 C_L + C_2 C_L)} \\ \text{K-LP:} & R_L \\ \text{K-HP:} & 0 \\ \text{K-BP:} & \frac{C_2 R_2 R_L r_o}{C_1 R_2 R_L + C_1 R_2 r_o + C_1 R_L r_o + C_2 R_2 r_o + C_L R_2 R_L g_m r_o + C_L R_2 R_L + C_L R_L r_o}{C_1 R_2 R_L + C_1 R_2 r_o + C_1 R_L r_o + C_2 R_2 r_o + C_L R_2 R_L g_m r_o + C_L R_2 R_L + C_L R_L r_o} \end{array}$$

# 8.15 INVALID-NUMER-15 $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$

$$H(s) = \frac{R_L \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 R_2 R_L s^2 + C_1 C_2 R_2 r_o s^2 + C_1 C_2 R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1}$$

### Parameters:

 $\begin{aligned} &\text{Q:} \frac{C_1C_2\sqrt{\frac{g_mr_o+1}{C_1C_2(R_2R_L+R_2r_o+R_Lr_o)}}(R_2R_L+R_2r_o+R_Lr_o)}{C_1R_L+C_1r_o+C_2R_2g_mr_o+C_2R_2+C_2r_o} \\ &\text{Wo:} \sqrt{\frac{g_mr_o+1}{C_1C_2(R_2R_L+R_2r_o+R_Lr_o)}} \\ &\text{bandwidth:} \quad \frac{C_1R_L+C_1r_o+C_2R_2g_mr_o+C_2R_2+C_2r_o}{C_1C_2(R_2R_L+R_2r_o+R_Lr_o)} \\ &\text{K-LP:} \; R_L \\ &\text{K-HP:} \; 0 \\ &\text{K-BP:} \; \frac{C_2R_L(R_2g_mr_o+R_2+r_o)}{C_1R_L+C_1r_o+C_2R_2g_mr_o+C_2R_2+C_2r_o} \\ &\text{Qz:} \; 0 \\ &\text{Wz:} \; \text{None} \end{aligned}$ 

# 8.16 INVALID-NUMER-16 $Z(s) = \left(\frac{R_1}{C_1R_1s+1}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$

$$H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L R_1 R_2 R_L s^2 + C_1 C_L R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 s + C_1 R_1 r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_2 r_o$$

### Parameters:

$$Q: \frac{C_1C_LR_1\sqrt{\frac{R_2+r_o}{C_1C_LR_1(R_2R_L+R_2r_o+R_Lr_o)}}(R_2R_L+R_2r_o+R_Lr_o)}{C_1R_1R_2+C_1R_1r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2R_L+C_LR_2r_o+C_LR_Lr_o}$$
wo: 
$$\sqrt{\frac{R_2+r_o}{C_1C_LR_1(R_2R_L+R_2r_o+R_Lr_o)}}$$
bandwidth: 
$$\frac{C_1R_1R_2+C_1R_1r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2R_L+C_LR_2r_o+C_LR_Lr_o}{C_1C_LR_1(R_2R_L+R_2r_o+R_Lr_o)}$$
K-LP: 
$$\frac{R_1(R_2g_mr_o+R_2+r_o)}{R_2+r_o}$$
K-HP: 
$$0$$
K-BP: 
$$\frac{C_LR_1R_L(R_2g_mr_o+R_2+r_o)}{C_1R_1R_2+C_LR_1r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2R_L+C_LR_2r_o+C_LR_Lr_o}{C_1R_1R_2+C_LR_1r_o+C_LR_1R_2+C_LR_1r_o+C_LR_2R_L+C_LR_2r_o+C_LR_Lr_o}$$
Qz: 
$$0$$
Wz: None

# 8.17 INVALID-NUMER-17 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$

$$H(s) = \frac{R_1 R_L \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 R_1 R_L r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_2 R_1 r_o s + C_2 R_L r_o s + R_1 g_m r_o + R_1 + R_L + r_o}$$

$$\begin{aligned} &\text{Q:} \ \frac{C_1C_2R_1R_Lr_o\sqrt{\frac{R_1g_mr_o+R_1+R_L+r_o}{C_1C_2R_1R_Lr_o}}}{C_1R_1R_L+C_1R_1r_o+C_2R_1r_o+C_2R_Lr_o} \\ &\text{wo:} \ \sqrt{\frac{R_1g_mr_o+R_1+R_L+r_o}{C_1C_2R_1R_Lr_o}} \\ &\text{bandwidth:} \ \frac{C_1R_1R_L+C_1R_1r_o+C_2R_1r_o+C_2R_Lr_o}{C_1C_2R_1R_Lr_o} \\ &\text{K-LP:} \ \frac{R_1R_L(g_mr_o+1)}{R_1g_mr_o+R_1+R_L+r_o} \\ &\text{K-HP:} \ 0 \\ &\text{K-BP:} \ \frac{C_2R_1R_Lr_o}{C_1R_1R_L+C_1R_1r_o+C_2R_1r_o+C_2R_Lr_o} \\ &\text{Qz:} \ 0 \\ &\text{Wz:} \ \text{None} \end{aligned}$$

# 8.18 INVALID-NUMER-18 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$

$$H(s) = \frac{R_1 \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_2 C_L R_1 r_o s^2 + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

### Parameters:

 $Q \colon \frac{R_1 r_o \sqrt{\frac{1}{R_1 r_o (C_1 C_2 + C_1 C_L + C_2 C_L)}} (C_1 C_2 + C_1 C_L + C_2 C_L)}{C_1 R_1 + C_2 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o}$   $\text{wo: } \sqrt{\frac{1}{R_1 r_o (C_1 C_2 + C_1 C_L + C_2 C_L)}}$   $\text{bandwidth: } \frac{C_1 R_1 + C_2 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o}{R_1 r_o (C_1 C_2 + C_1 C_L + C_2 C_L)}$   $\text{K-LP: } R_1 \left( g_m r_o + 1 \right)$  K-HP: 0  $\text{K-BP: } \frac{C_2 R_1 r_o}{C_1 R_1 + C_2 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L r_o}$  Qz: 0 Wz: None

## 8.19 INVALID-NUMER-19 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$

#### Parameters:

$$\begin{array}{c} R_1R_Lr_o\sqrt{\frac{R_1g_mr_o+R_1+R_L+r_o}{R_1R_Lr_o(C_1C_2+C_1C_L+C_2C_L)}}(C_1C_2+C_1C_L+C_2C_L)\\ Q\colon \frac{1}{C_1R_1R_L+C_1R_1r_o+C_2R_1r_o+C_2R_L}r_o+C_LR_1R_Lg_mr_o+C_LR_1R_L+C_LR_Lr_o}\\ \text{wo: } \sqrt{\frac{R_1g_mr_o+R_1+R_L+r_o}{R_1R_Lr_o(C_1C_2+C_1C_L+C_2C_L)}}\\ \text{bandwidth: } \frac{C_1R_1R_L+C_1R_1r_o+C_2R_1r_o+C_2R_Lr_o+C_LR_1R_Lg_mr_o+C_LR_1R_L+C_LR_Lr_o}{R_1R_Lr_o(C_1C_2+C_1C_L+C_2C_L)}\\ \text{K-LP: } \frac{R_1R_L(g_mr_o+1)}{R_1g_mr_o+R_1+R_L+r_o}\\ \text{K-HP: } 0\\ \text{K-BP: } \frac{C_2R_1R_Lr_o}{C_1R_1R_L+C_1R_1r_o+C_2R_1r_o+C_2R_Lr_o+C_LR_1R_Lg_mr_o+C_LR_1R_L+C_LR_Lr_o}\\ \text{Qz: } 0\\ \text{Wz: None} \end{array}$$

**8.20** INVALID-NUMER-20  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$ 

$$\begin{array}{l} \text{Q:} \ \frac{C_1C_2R_1R_2R_Lr_o\sqrt{\frac{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o}{C_1C_2R_1R_2R_Lr_o}}}{C_1R_1R_2R_L+C_1R_1R_2r_o+C_1R_1R_Lr_o+C_2R_1R_2r_o+C_2R_2R_Lr_o}}\\ \text{wo:} \ \sqrt{\frac{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o}{C_1C_2R_1R_2R_Lr_o}}}\\ \text{bandwidth:} \ \frac{C_1R_1R_2R_L+C_1R_1R_2r_o+C_1R_1R_Lr_o+C_2R_1R_2r_o+C_2R_2R_Lr_o}{C_1C_2R_1R_2R_Lr_o}}{C_1C_2R_1R_2R_Lr_o}\\ \text{K-LP:} \ \frac{R_1R_L(R_2g_mr_o+R_2+R_L+R_2r_o+R_Lr_o)}{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o}}\\ \text{K-HP:} \ 0\\ \text{K-BP:} \ \frac{C_2R_1R_2R_Lr_o}{C_1R_1R_2R_L+C_1R_1R_2r_o+C_1R_1R_Lr_o+C_2R_1R_2r_o+C_2R_2R_Lr_o}}{C_1R_1R_2R_L+C_1R_1R_2r_o+C_1R_1R_Lr_o+C_2R_1R_2r_o+C_2R_2R_Lr_o}}\\ \text{Wz:} \ \text{None} \end{array}$$

8.21 INVALID-NUMER-21 
$$Z(s) = \left(\frac{R_1}{C_1R_1s+1}, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{R_1 \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 r_o s^2 + C_1 R_1 R_2 s + C_1 R_1 r_o s + C_2 C_L R_1 R_2 r_o s^2 + C_2 R_2 r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + R_2 + r_o}$$

### Parameters:

 $\begin{array}{c} R_1R_2r_o\sqrt{\frac{R_2+r_o}{R_1R_2r_o(C_1C_2+C_1C_L+C_2C_L)}}(C_1C_2+C_1C_L+C_2C_L)\\ Q\colon \frac{R_1R_2+C_1R_1r_o+C_2R_2r_o+C_LR_1}{C_1R_1R_2+C_1R_1r_o+C_2R_2r_o+C_LR_1}R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2r_o}\\ \text{Wo: } \sqrt{\frac{R_2+r_o}{R_1R_2r_o(C_1C_2+C_1C_L+C_2C_L)}}\\ \text{bandwidth: } \frac{C_1R_1R_2+C_1R_1r_o+C_2R_2r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2r_o}{R_1R_2r_o(C_1C_2+C_1C_L+C_2C_L)}\\ \text{K-LP: } \frac{R_1(R_2g_mr_o+R_2+r_o)}{R_2+r_o}\\ \text{K-HP: } 0\\ \text{K-BP: } \frac{C_2R_1R_2r_o}{C_1R_1R_2+C_1R_1r_o+C_2R_2r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2r_o}\\ \text{Qz: } 0\\ \text{Wz: None} \end{array}$ 

## 8.22 INVALID-NUMER-22 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$

 $H(s) = \frac{R_1 R_L \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 R_1 R_2 R_L r_o s^2 + C_1 C_L R_1 R_2 R_L r_o s^2 + C_1 R_1 R_2 r_o s + C_2 R_2 R_2 r_o s +$ 

### Parameters:

$$\begin{array}{c} R_{1}R_{2}R_{L}r_{o}\sqrt{\frac{R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o}}{R_{1}R_{2}R_{L}r_{o}(C_{1}C_{2}+C_{1}C_{L}+C_{2}C_{L})}}}(C_{1}C_{2}+C_{1}C_{L}+C_{2}C_{L}})\\ Q:\frac{1}{C_{1}R_{1}R_{2}R_{L}+C_{1}R_{1}R_{2}r_{o}+C_{1}R_{1}R_{L}r_{o}+C_{2}R_{1}R_{2}r_{o}+C_{2}R_{2}R_{L}r_{o}+C_{L}R_{1}R_{2}R_{L}+C_{L}R_{1}R_{2}R_{L}+C_{L}R_{1}R_{L}r_{o}+C_{L}R_{2}R_{L}r_{o}}}\\ wo:\sqrt{\frac{R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o}}{R_{1}R_{2}R_{L}r_{o}(C_{1}C_{2}+C_{1}C_{L}+C_{2}C_{L})}}}\\ bandwidth:\frac{C_{1}R_{1}R_{2}R_{L}+C_{1}R_{1}R_{2}r_{o}+C_{1}R_{1}R_{L}r_{o}+C_{2}R_{1}R_{2}r_{o}+C_{2}R_{2}R_{L}r_{o}+C_{L}R_{1}R_{2}R_{L}g_{m}r_{o}+C_{L}R_{1}R_{2}R_{L}+C_{L}R_{1}R_{L}r_{o}+C_{L}R_{2}R_{L}r_{o}}{R_{1}R_{2}R_{L}r_{o}(C_{1}C_{2}+C_{1}C_{L}+C_{2}C_{L})}\\ K-LP:\frac{R_{1}R_{L}(R_{2}g_{m}r_{o}+R_{2}+r_{o})}{R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o}}}\\ K-HP:0\\ K-BP:\frac{C_{2}R_{1}R_{2}R_{L}+C_{1}R_{1}R_{2}r_{o}+C_{1}R_{1}R_{L}r_{o}+C_{2}R_{1}R_{2}R_{L}+C_{L}R_{1}R_{2}R_{L}+C_{L}R_{1}R_{L}r_{o}+C_{L}R_{2}R_{L}r_{o}}}{C_{1}R_{1}R_{2}R_{L}+C_{1}R_{1}R_{2}r_{o}+C_{1}R_{1}R_{2}r_{o}+C_{2}R_{2}R_{L}r_{o}+C_{L}R_{1}R_{2}R_{L}+C_{L}R_{1}R_{2}R_{L}+C_{L}R_{1}R_{L}r_{o}+C_{L}R_{2}R_{L}r_{o}}}\\ Wz: None \end{array}$$

## **8.23** INVALID-NUMER-23 $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$

$$\begin{array}{c} C_1C_2R_1\sqrt{\frac{R_1g_mr_o+R_1+R_L+r_o}{C_1C_2R_1(R_2R_L+R_2r_o+R_Lr_o)}}(R_2R_L+R_2r_o+R_Lr_o)\\ Q\colon \frac{1}{C_1R_1R_L+C_1R_1r_o+C_2R_1R_2g_mr_o+C_2R_1R_2+C_2R_1r_o+C_2R_2R_L+C_2R_2r_o+C_2R_Lr_o}\\ \text{wo: } \sqrt{\frac{R_1g_mr_o+R_1+R_L+r_o}{C_1C_2R_1(R_2R_L+R_2r_o+R_Lr_o)}}\\ \text{bandwidth: } \frac{C_1R_1R_L+C_1R_1r_o+C_2R_1R_2g_mr_o+C_2R_1R_2+C_2R_1r_o+C_2R_2R_L+C_2R_2r_o+C_2R_Lr_o}{C_1C_2R_1(R_2R_L+R_2r_o+R_Lr_o)}\\ \text{K-LP: } \frac{R_1R_L(g_mr_o+1)}{R_1g_mr_o+R_1+R_L+r_o}\\ \text{K-HP: 0}\\ \text{K-BP: } \frac{C_2R_1R_L(R_2g_mr_o+R_2+r_o)}{C_1R_1R_L+C_1R_1r_o+C_2R_1R_2g_mr_o+C_2R_1R_2+C_2R_1r_o+C_2R_2R_L+C_2R_2r_o+C_2R_Lr_o}\\ \text{Qz: 0}\\ \text{Wz: None} \end{array}$$

## 8.24 INVALID-NUMER-24 $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$

$$H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L R_1 R_2 R_L g_m r_o s^2 + C_1 C_L R_1 R_2 R_L s^2 + C_1 C_L R_2 R_L r_o s^2 + C_1 R_1 R_2 g_m r_o s + C_1 R_1 R_2 s + C_1 R_1 r_o s + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_2 R_L g_m r_o s + C_L R_$$

### Parameters:

 $\begin{array}{l} \text{Q:} \frac{C_1C_LR_L\sqrt{\frac{R_2g_mr_o+R_2+r_o}{C_1C_LR_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}}(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}{C_1R_1R_2g_mr_o+C_1R_1R_2+C_1R_1r_o+C_1R_2R_L+C_1R_2r_o+C_1R_Lr_o+C_LR_2R_Lg_mr_o+C_LR_2R_L+C_LR_Lr_o}}\\ \text{wo:} \sqrt{\frac{R_2g_mr_o+R_2+r_o}{C_1C_LR_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}}\\ \text{bandwidth:} \frac{C_1R_1R_2g_mr_o+C_1R_1R_2+C_1R_1r_o+C_1R_2R_L+C_1R_2r_o+C_1R_Lr_o+C_LR_2R_Lg_mr_o+C_LR_2R_L+C_LR_Lr_o}{C_1C_LR_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2r_o)}}\\ \text{K-LP:} R_L\\ \text{K-HP:} 0\\ \text{K-BP:} \frac{C_1R_1R_2g_mr_o+C_1R_1R_2+C_1R_1r_o+C_1R_2R_L+C_1R_2r_o+C_LR_2R_Lg_mr_o+C_LR_2R_L+C_LR_Lr_o}{C_1C_1R_1R_2g_mr_o+R_2+r_o)}\\ \text{Qz:} 0\\ \text{Wz:} \text{None} \end{array}$ 

### 9 INVALID-WZ

9.1 INVALID-WZ-1  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L R_1 r_o s^2 + C_2 C_L R_L r_o s^2 + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L R_L s + C_L r_o s + 1}$$

### Parameters:

$$\begin{aligned} & \text{Q:} \ \frac{C_2 C_L r_o \sqrt{\frac{1}{C_2 C_L r_o (R_1 + R_L)}} (R_1 + R_L)}{C_2 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L R_L + C_L r_o} \\ & \text{wo:} \ \sqrt{\frac{1}{C_2 C_L r_o (R_1 + R_L)}} \\ & \text{bandwidth:} \ \frac{C_2 r_o + C_L R_1 g_m r_o + C_L R_1 + C_L R_L + C_L r_o}{C_2 C_L r_o (R_1 + R_L)} \\ & \text{K-LP:} \ R_1 \left( g_m r_o + 1 \right) \\ & \text{K-HP:} \ \frac{R_1 R_L}{R_1 + R_L} \\ & \text{K-BP:} \ \frac{R_1 (C_2 r_o + C_L R_L g_m r_o + C_L R_L)}{C_2 r_o + C_L R_1 g_m r_o + C_L R_L + C_L r_o} \\ & \text{Qz:} \ \frac{C_2 C_L R_L r_o \sqrt{\frac{1}{C_2 C_L r_o (R_1 + R_L)}}}{C_2 r_o + C_L R_L g_m r_o + C_L R_L} \\ & \text{Wz:} \ \sqrt{\frac{g_m r_o + 1}{C_2 C_L R_L r_o}} \end{aligned}$$

**9.2** INVALID-WZ-2  $Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L R_1 R_2 r_o s^2 + C_2 C_L R_2 R_L r_o s^2 + C_2 R_2 r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_1 r_o s + R_2 + r_o}$$

$$\begin{array}{c} C_2C_LR_2r_o\sqrt{\frac{R_2+r_o}{C_2C_LR_2r_o(R_1+R_L)}}(R_1+R_L)\\ Q\colon \frac{C_2R_2r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2R_L+C_LR_2r_o+C_LR_Lr_o}{C_2C_LR_2r_o(R_1+R_L)}\\ \text{wo: } \sqrt{\frac{R_2+r_o}{C_2C_LR_2r_o(R_1+R_L)}}\\ \text{bandwidth: } \frac{C_2R_2r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2R_L+C_LR_2r_o+C_LR_Lr_o}{C_2C_LR_2r_o(R_1+R_L)}\\ \text{K-LP: } \frac{R_1(R_2g_mr_o+R_2+r_o)}{R_2+r_o}\\ \text{K-HP: } \frac{R_1R_L}{R_1+R_L}\\ \text{K-BP: } \frac{R_1(C_2R_2r_o+C_LR_2R_Lg_mr_o+C_LR_2R_L+C_LR_Lr_o)}{C_2R_2r_o+C_LR_1R_2g_mr_o+C_LR_1R_2+C_LR_1r_o+C_LR_2R_L+C_LR_2r_o+C_LR_Lr_o} \end{array}$$

$$\begin{array}{l} \text{Qz: } \frac{C_2C_LR_2R_Lr_o\sqrt{\frac{R_2+r_o}{C_2C_LR_2r_o(R_1+R_L)}}}{C_2R_2r_o+C_LR_2R_Lg_mr_o+C_LR_2R_L+C_LR_Lr_o} \\ \text{Wz: } \sqrt{\frac{R_2g_mr_o+R_2+r_o}{C_2C_LR_2R_Lr_o}} \end{array}$$

**9.3** INVALID-WZ-3  $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_2 R_L s^2 + C_2 C_L R_2 r_o s^2 + C_2 C_L R_L r_o s^2 + C_2 R_2 s + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L R_L s + C_L r_o s + 1}$$

### Parameters:

$$\begin{aligned} & \text{Q:} & \frac{C_2C_L\sqrt{\frac{1}{C_2C_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o)}}{C_2R_2+C_2r_o+C_LR_1g_mr_o+C_L}(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o)} \\ & \text{W0:} & \frac{1}{C_2C_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o)} \\ & \text{bandwidth:} & \frac{C_2R_2+C_2r_o+C_LR_1g_mr_o+C_LR_1+C_LR_o}{C_2C_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o)} \\ & \text{K-LP:} & R_1\left(g_mr_o+1\right) \\ & \text{K-HP:} & \frac{R_1R_L(R_2g_mr_o+R_2+r_o)}{R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o} \\ & \text{K-BP:} & \frac{R_1(C_2R_2g_mr_o+C_2R_2+C_2r_o+C_LR_1g_mr_o+C_LR_L)}{C_2R_2+C_2r_o+C_LR_1g_mr_o+C_LR_L+C_Lr_o} \\ & \text{Qz:} & \frac{C_2C_LR_L\sqrt{\frac{1}{C_2C_L(R_1R_2g_mr_o+R_1R_2+R_1r_o+R_2R_L+R_2r_o+R_Lr_o)}}{C_2R_2g_mr_o+C_2}(R_2g_mr_o+C_2R_2+C_2r_o+C_LR_Lg_mr_o+C_LR_L)} \\ & \text{Wz:} & \sqrt{\frac{g_mr_o+1}{C_2C_LR_L(R_2g_mr_o+R_2+r_o)}}} \\ \end{aligned}$$

9.4 INVALID-WZ-4  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 R_1 r_o s^2 + C_1 C_2 R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_2 r_o s + g_m r_o + 1}$$

### Parameters:

$$\begin{aligned} & \text{Q:} \ \frac{C_1C_2r_o\sqrt{\frac{g_mr_o+1}{C_1C_2r_o(R_1+R_L)}}(R_1+R_L)}{C_1R_1g_mr_o+C_1R_1+C_1R_L+C_1r_o+C_2r_o} \\ & \text{wo:} \ \sqrt{\frac{g_mr_o+1}{C_1C_2r_o(R_1+R_L)}} \\ & \text{bandwidth:} \ \frac{C_1R_1g_mr_o+C_1R_1+C_1R_L+C_1r_o+C_2r_o}{C_1C_2r_o(R_1+R_L)} \\ & \text{K-LP:} \ R_L \\ & \text{K-HP:} \ \frac{R_1R_L}{R_1+R_L} \\ & \text{K-BP:} \ \frac{R_L(C_1R_1g_mr_o+C_1R_1+C_2r_o)}{C_1R_1g_mr_o+C_1R_1+C_1R_L+C_1r_o+C_2r_o} \\ & \text{Qz:} \ \frac{C_1C_2R_1r_o\sqrt{\frac{g_mr_o+1}{C_1C_2r_o(R_1+R_L)}}}{C_1R_1g_mr_o+C_1R_1+C_2r_o} \\ & \text{Wz:} \ \sqrt{\frac{g_mr_o+1}{C_1C_2R_1r_o}} \end{aligned}$$

**9.5** INVALID-WZ-5  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 R_1 R_2 r_o s^2 + C_1 C_2 R_2 R_L r_o s^2 + C_1 R_1 R_2 g_m r_o s + C_1 R_1 R_2 s + C_1 R_1 r_o s + C_1 R_2 r_o s + C_1 R_2 r_o s + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o}$$

$$\begin{array}{c} C_1C_2R_2r_o\sqrt{\frac{R_2g_mr_o+R_2+r_o}{C_1C_2R_2r_o(R_1+R_L)}}(R_1+R_L)\\ \text{Q: } \frac{C_1R_1R_2g_mr_o+C_1R_1R_2+C_1R_1r_o+C_1R_2R_L+C_1R_2r_o+C_1R_Lr_o+C_2R_2r_o}{C_1C_2R_2r_o(R_1+R_L)}\\ \text{wo: } \sqrt{\frac{R_2g_mr_o+R_2+r_o}{C_1C_2R_2r_o(R_1+R_L)}}\\ \text{bandwidth: } \frac{C_1R_1R_2g_mr_o+C_1R_1R_2+C_1R_1r_o+C_1R_2R_L+C_1R_2r_o+C_1R_Lr_o+C_2R_2r_o}{C_1C_2R_2r_o(R_1+R_L)} \end{array}$$

$$\begin{split} & \text{K-LP: } R_L \\ & \text{K-HP: } \frac{R_1 R_L}{R_1 + R_L} \\ & \text{K-BP: } \frac{R_L (C_1 R_1 R_2 g_m r_o + C_1 R_1 R_2 + C_1 R_1 r_o + C_2 R_2 r_o)}{C_1 R_1 R_2 g_m r_o + C_1 R_1 R_2 + C_1 R_1 r_o + C_1 R_2 R_L + C_1 R_2 r_o + C_1 R_L r_o + C_2 R_2 r_o} \\ & \text{Qz: } \frac{C_1 C_2 R_1 R_2 r_o \sqrt{\frac{R_2 g_m r_o + R_2 + r_o}{C_1 C_2 R_2 r_o (R_1 + R_L)}}}{C_1 R_1 R_2 g_m r_o + C_1 R_1} R_2 + C_1 R_1 r_o + C_2 R_2 r_o} \\ & \text{Wz: } \sqrt{\frac{R_2 g_m r_o + R_2 + r_o}{C_1 C_2 R_1 R_2 r_o}} \end{split}$$

**9.6** INVALID-WZ-6  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$ 

$$H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 R_1 R_2 g_m r_o s^2 + C_1 C_2 R_1 r_o s^2 + C_1 C_2 R_2 r_o s^2 + C_1 C_2 R_2 r_o s^2 + C_1 C_2 R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_L s + C_1 r_o s + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1}$$

### Parameters:

$$\begin{array}{c} C_{1}C_{2}\sqrt{\frac{g_{m}r_{o}+1}{C_{1}C_{2}(R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o})}}(R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o})}\\ C_{1}R_{1}g_{m}r_{o}+C_{1}R_{1}+C_{1}R_{L}+C_{1}r_{o}+C_{2}R_{2}g_{m}r_{o}+C_{2}R_{2}+C_{2}r_{o}}\\ Wo: \sqrt{\frac{g_{m}r_{o}+1}{C_{1}C_{2}(R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o})}\\ bandwidth: \frac{C_{1}R_{1}g_{m}r_{o}+C_{1}R_{1}+C_{1}R_{L}+C_{1}r_{o}+C_{2}R_{2}g_{m}r_{o}+C_{2}R_{2}+C_{2}r_{o}}{C_{1}C_{2}(R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o})}\\ K-LP: R_{L} \\ K-HP: \frac{R_{1}R_{L}(R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o})}{C_{1}R_{1}g_{m}r_{o}+C_{1}R_{1}+C_{2}R_{2}g_{m}r_{o}+C_{2}R_{2}+C_{2}r_{o})}\\ K-BP: \frac{R_{L}(C_{1}R_{1}g_{m}r_{o}+C_{1}R_{1}+C_{2}R_{2}g_{m}r_{o}+C_{2}R_{2}+C_{2}r_{o})}{C_{1}R_{1}g_{m}r_{o}+C_{1}R_{1}+C_{1}R_{L}+C_{1}r_{o}+C_{2}R_{2}+C_{2}r_{o})}\\ Q_{Z}: \frac{C_{1}C_{2}R_{1}\sqrt{\frac{g_{m}r_{o}+1}{C_{1}C_{2}(R_{1}R_{2}g_{m}r_{o}+R_{1}R_{2}+R_{1}r_{o}+R_{2}R_{L}+R_{2}r_{o}+R_{L}r_{o})}}{C_{1}R_{1}g_{m}r_{o}+C_{1}R_{1}+C_{2}R_{2}g_{m}r_{o}+C_{2}R_{2}+C_{2}r_{o}}}\\ W_{Z}: \sqrt{\frac{g_{m}r_{o}+1}{C_{1}C_{2}R_{1}(R_{2}g_{m}r_{o}+R_{2}+r_{o})}}\\ \end{array}$$

### 10 INVALID-ORDER

10.1 INVALID-ORDER-1  $Z(s) = (R_1, R_2, \infty, \infty, \infty, R_L)$ 

$$H(s) = \frac{R_1 R_L (R_2 g_m r_o + R_2 + r_o)}{R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o}$$

10.2 INVALID-ORDER-2  $Z(s) = \left(R_1, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( R_2 g_m r_o + R_2 + r_o \right)}{C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + R_2 + r_o}$$

10.3 INVALID-ORDER-3  $Z(s) = \left(R_1, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_{1}R_{L}\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{L}R_{1}R_{2}R_{L}g_{m}r_{o}s + C_{L}R_{1}R_{2}R_{L}s + C_{L}R_{1}R_{L}r_{o}s + C_{L}R_{2}R_{L}r_{o}s + R_{1}R_{2}g_{m}r_{o} + R_{1}R_{2} + R_{1}r_{o} + R_{2}R_{L} + R_{2}r_{o} + R_{L}r_{o}s + R_{1}R_{2}g_{m}r_{o} + R_{1}R_{2} + R_{1}r_{o} + R_{2}R_{L} + R_{2}r_{o} + R_{L}r_{o}s + R_{1}R_{2}g_{m}r_{o} + R_{1}R_{2} + R_{1}r_{o} + R_{2}R_{L} + R_{2}r_{o} + R_{L}r_{o}s + R_{1}R_{2}g_{m}r_{o} + R_{1}R_{2} + R_{1}r_{o} + R_{2}R_{L} + R_{2}r_{o} + R_{L}r_{o}s + R_{1}R_{2}g_{m}r_{o} + R_{1}R_{2} + R_{1}r_{o} + R_{2}R_{L} + R_{2}r_{o} + R_{L}r_{o}s + R_{1}R_{2}g_{m}r_{o} + R_{1}R_{2}r_{o} + R_{1}R_{2}$$

10.4 INVALID-ORDER-4  $Z(s) = \left(R_1, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_L r_o s + R_2 + r_o}$$

10.5 INVALID-ORDER-5 
$$Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{R_1 R_L (C_2 r_o s + g_m r_o + 1)}{C_2 R_1 r_o s + C_2 R_L r_o s + R_1 g_m r_o + R_1 + R_L + r_o}$$

10.6 INVALID-ORDER-6  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_L r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

10.7 INVALID-ORDER-7  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

10.8 INVALID-ORDER-8  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_2 r_o s + g_m r_o + 1 \right) \left( C_L L_L s^2 + C_L R_L s + 1 \right)}{C_2 C_L L_L r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_L r_o s^2 + C_2 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_L R_L s + C_L r_o s + 1}$$

10.9 INVALID-ORDER-9  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_{L}R_{1}R_{L}s\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{L}R_{1}r_{o}s^{3} + C_{2}L_{L}R_{1}r_{o}s^{2} + C_{2}L_{L}R_{L}r_{o}s + C_{L}L_{L}R_{1}R_{L}g_{m}r_{o}s^{2} + C_{L}L_{L}R_{1}R_{L}s^{2} + C_{L}L_{L}R_{1}r_{o}s^{2} + L_{L}R_{1}g_{m}r_{o}s + L_{L}R_{1}s + L_{L}R_{L}s + L_{L}r_{o}s + R_{1}R_{L}g_{m}r_{o} + R_{1}R_{L} + R_{L}r_{o}s + R_{1}R_{L}r_{o}s +$$

**10.10** INVALID-ORDER-10  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

10.11 INVALID-ORDER-11  $Z(s) = \left(R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

10.12 INVALID-ORDER-12  $Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_1 R_L \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 R_1 R_2 r_o s + C_2 R_2 R_L r_o s + R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o}$$

10.13 INVALID-ORDER-13  $Z(s) = \left(R_1, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_L R_2 r_o s^3 + C_2 C_L R_1 R_2 r_o s^2 + C_2 R_2 r_o s + C_L L_L R_2 s^2 + C_L L_L r_o s^2 + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + R_2 + r_o}$$

10.14 INVALID-ORDER-14  $Z(s) = \left(R_1, \frac{R_2}{C_2R_2s+1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2+1}\right)$ 

$$H(s) = \frac{L_L R_1 s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_L R_1 R_2 r_o s^3 + C_2 L_L R_2 r_o s^2 + C_2 R_1 R_2 r_o s + C_L L_L R_1 R_2 g_m r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_2 r_o s^2 + L_L R_2 s + L_L r_o s + R_1 R_2 g_m r_o + R_1 R_2 + R_1 r_o + R_2 r_o s^2 + C_L R_1 R_2 r_o s^2$$

10.15 INVALID-ORDER-15  $Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_L R_2 r_o s^3 + C_2 C_L R_1 R_2 r_o s^2 + C_2 R_2 R_L r_o s^2 + C_L L_L R_2 s^2 + C_L L_L r_o s^2 + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_1 r_o s + C_L R_2 r_o s + C_L R_2$$

**10.16** INVALID-ORDER-16  $Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_L R_1 R_L s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_L R_1 R_2 R_L r_o s^3 + C_2 L_L R_1 R_2 r_o s^2 + C_2 L_L R_2 R_L r_o s^2 + C_L L_L R_1 R_2 R_L r_o s^2 + C_L L_L R_1 R_2 R_L r_o s^2 + C_L L_L R_1 R_2 r_o s^2 + L_L R_1 R_2 r_o s^2 +$$

**10.17** INVALID-ORDER-17  $Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L R_L s^2 + L_L s + R_L \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_L R_1 R_2 r_o s^3 + C_2 C_L L_L R_2 R_L r_o s^3 + C_2 L_L R_2 r_o s^2 + C_L L_L R_1 R_2 r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_2 r_$$

**10.18** INVALID-ORDER-18  $Z(s) = \left(R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

$$H(s) = \frac{R_1 R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_L R_1 R_2 r_o s^3 + C_2 C_L L_L R_2 R_L r_o s^3 + C_2 C_L R_1 R_2 R_L r_o s^2 + C_L L_L R_1 R_2 g_m r_o s^2 + C_L L_L R_1 R_2 s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L L_L R_1 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L L_L R_2 r_o s^2 + C_L R_1 R_2 R_L r_o$$

10.19 INVALID-ORDER-19  $Z(s) = \left(R_1, R_2 + \frac{1}{C_{2s}}, \infty, \infty, \infty, R_L\right)$ 

**10.20** INVALID-ORDER-20  $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_L R_2 s^3 + C_2 C_L L_L r_o s^3 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_2 r_o s^2 + C_2 R_2 s + C_2 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

10.21 INVALID-ORDER-21  $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

**10.22** INVALID-ORDER-22  $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_L R_2 s^3 + C_2 C_L L_L r_o s^3 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_2 R_2 s^2 + C_2 C_L R_2 r_o s^2 + C_2 C_L R_2$$

10.23 INVALID-ORDER-23 
$$Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{L_L R_1 R_L s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_L R_1 R_2 R_L g_m r_o s^3 + C_2 C_L L_L R_1 R_2 g_m r_o s^3 + C_2 L_L R_$$

10.24 INVALID-ORDER-24  $Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L R_L s^2 + L_L s + R_L \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_L R_1 R_2 g_m r_o s^3 + C_2 C_L L_L R_1 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 L_L$$

10.25 INVALID-ORDER-25 
$$Z(s) = \left(R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{R_1 R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_L R_1 R_2 g_m r_o s^3 + C_2 C_L L_L R_1 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L L_L R_1 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 R_1 R_2 g_m r_o s^2 + C_2 R_2 R_2 g_m r_o$$

**10.26** INVALID-ORDER-26  $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

10.27 INVALID-ORDER-27  $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_1 R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 R_1 R_L g_m r_o s^3 + C_2 C_L L_2 R_1 R_L r_o s^3 + C_2 C_L L_2 R_1 r_o s^2 + C_2 L_2 R_1 g_m r_o s^2 + C_2 L_2 R_1 s^2 + C_2 L_2 R_1 s^2 + C_2 L_2 r_o s^2 + C_2 R_1 r_o s + C_L R_1 R_L g_m r_o s$$

**10.28** INVALID-ORDER-28  $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_L r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L R_L s + C_L r_o s + 1}$$

**10.29** INVALID-ORDER-29  $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 L_2 s^4 + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 r_o s^3 + C_2 C_L L_L r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

**10.30** INVALID-ORDER-30  $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L R_1 s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_2 L_L R_1 g_m r_o s^4 + C_2 C_L L_2 L_L r_o s^4 + C_2 C_L L_L R_1 r_o s^3 + C_2 L_2 L_L s^3 + C_2 L_2 R_1 g_m r_o s^2 + C_2 L_2 r_o s^2 + C_2 L_L r_o s^2 + C_2 L_L R_1 g_m r_o s^2 + C_L R_1$$

**10.31** INVALID-ORDER-31  $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 L_L s^4 + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 r_o s^3 + C_2 C_L L_1 r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_$$

10.32 INVALID-ORDER-32  $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_L R_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_2 L_L R_1 R_L g_m r_o s^4 + C_2 C_L L_2 L_L R_1 R_L r_o s^4 + C_2 C_L L_L R_1 R_L r_o s^3 + C_2 L_2 L_L R_1 g_m r_o s^3 + C_2 L_2 R_1 R_L g_m r_o s^3 + C_2 R_1 R_L g_m r_$$

10.33 INVALID-ORDER-33  $Z(s) = \left(R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L R_L s^2 + L_L s + R_L \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_L L_L R_1 g_m r_o s^4 + C_2 C_L L_L L_L R_1 s^4 + C_2 C_L L_L L_L r_o s^4 + C_2 C_L L_L R_1 r_o s^3 + C_2 L_L L_L R_1 s^3 + C_2 L_L R_1 g_m r_o s^2 + C_2 L_2 R_1 s^2 + C_2 L_2 R_1 s^2 + C_2 L_2 r_o s^2 + C_2 L_L r_o s^2 + C_2 L_L R_1 g_m r_o s^2 + C_L R_1 g_m r_o s^2 + C_L$$

10.34 INVALID-ORDER-34  $Z(s) = \left(R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

$$H(s) = \frac{R_1 R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 L_L R_1 g_m r_o s^4 + C_2 C_L L_2 L_L R_1 s^4 + C_2 C_L L_2 L_L R_1 s^4 + C_2 C_L L_2 R_1 R_L g_m r_o s^3 + C_2 C_L L_2 R_1 R_L r_o s^3 + C_2 C_L R_$$

**10.35** INVALID-ORDER-35  $Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 R_2 s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_2 r_o s^2 + C_2 L_2 s^2 + C_2 R_2 s + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

**10.36** INVALID-ORDER-36  $Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_1 R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 R_1 R_L g_m r_o s^3 + C_2 C_L L_2 R_1 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 C_L R_1 R_2 R_L g_m r_o s^2 + C_2 L_2 R_1 g_m r_o s^2 + C_2 L_2 R_2 g_m r_o s^2$$

10.37 INVALID-ORDER-37 
$$Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 r_o s^3 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 R_2 s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_2 r_o s^2 + C_2$$

**10.38** INVALID-ORDER-38  $Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_2 L_L s^4 + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_2 s^3 + C_2 C_L L_L R_2 s^3 + C_2 C_L L_L r_o s^3 + C_2 C_L L_R r_o s^2 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_2 r_o s^2 + C_2 L_2 s^2 + C_2 R_2 s + C_2 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1 r_o s^2 + C_L R_1 r_o s^2 + C_L$$

```
10.39 INVALID-ORDER-39 Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
```

$$H(s) = \frac{L_L R_1 s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_2 L_L R_1 g_m r_o s^4 + C_2 C_L L_L R_1 R_2 g_m r_o s^3 + C_2 C_L L_L R_1 R_2 s^3 + C_2 C_L L_L R_1 r_o s^3 + C_2 L_L L_R s^3 + C_2 L_L R_1 s^3 + C_2 L_L$$

**10.40** INVALID-ORDER-40 
$$Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_L L_2 s^4 + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 R_2 s^3 + C_2 C_L L_2 R_2 s^3 + C_2 C_L L_1 R_2 g_m r_o s^2 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_2 R_2 s^$$

10.41 INVALID-ORDER-41 
$$Z(s) = \left(R_1, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{L}{C_2C_LL_2L_LR_1R_Lg_mr_os^4 + C_2C_LL_2L_LR_1R_Ls^4 + C_2C_LL_2L_LR_1r_os^4 + C_2C_LL_LR_1R_2R_Lg_mr_os^3 + C_2C_LL_LR_1R_Lr_os^3 + C_2C_LL_LR_1R_Lr_os^3 + C_2C_LL_LR_1g_mr_os^3 + C_2L_2L_LR_1s^3 + C_2L_2L_2L_2R_1s^3 + C_2L_2L_2R_1s^3 + C_2L_2L_2R_2s^3 + C_2L_2L_2R_2s^3 + C_2L_2L_2R_2s$$

10.42 INVALID-ORDER-42 
$$Z(s) = \left(R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$H(s) = \frac{R_1 \left( C_L L_L R_L s^2 + L_L s + R_L \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s - C_2 L_2 L_2 R_1 g_m r_o s^4 + C_2 C_L L_2 L_2 R_1 g_m r_o s^4 + C_2 C_L L_2 L_2 R_1 g_m r_o s^4 + C_2 C_L L_2 R_1 R_2 g_m r_o s^4 + C_2 C_L R_2 R_$$

10.43 INVALID-ORDER-43 
$$Z(s) = \left(R_1, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$$

$$H(s) = \frac{1}{C_2C_LL_2L_LR_1g_mr_os^4 + C_2C_LL_2L_LR_1s^4 + C_2C_LL_2L_LR_2s^4 + C_2C_LL_2R_1R_Lg_mr_os^3 + C_2C_LL_2R_1R_Ls^3 + C_2C_LL_2R_1R_2s^3 + C_2C_LL_2R_1R_2s^2 + C_2C_LL_2R_1R_2s^2 + C_2C_LL_2R_1R_2s^2 + C_2C_LL_2R_1R_2s^2 + C_2C$$

**10.44** INVALID-ORDER-44 
$$Z(s) = \left(R_1, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{R_1 \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_L L_2 R_1 g_m r_o s^2 + C_L L_2 R_1 g_m r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + L_2 s + R_2 + r_o}$$

10.45 INVALID-ORDER-45 
$$Z(s) = \left(R_1, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_LR_Ls+1}\right)$$

$$H(s) = \frac{R_1 R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 R_1 R_2 R_L g_m r_o s^3 + C_2 C_L L_2 R_1 R_L g_o s^3 + C_2 L_2 R_1 R_2 g_m r_o s^2 + C_2 L_2 R_1 R_2 g_o s^2 + C_2 L_2 R_2 g_o s^2 +$$

**10.46** INVALID-ORDER-46 
$$Z(s) = \left(R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 L_2 R_2 r_o s^3 + C_2 L_2 R_1 r_o s^3 + C_2 L_2 R_2 r_o s^$$

```
 \begin{aligned} & \textbf{10.47} \quad \textbf{INVALID-ORDER-47} \ Z(s) = \left( R_1, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ L_Ls + \frac{1}{C_Ls} \right) \\ & R_1 \left( C_LL_Ls^2 + 1 \right) \left( C_2L_2R_2gm_ros^2 + C_2L_2R_2s^2 + C_2L_2ros^2 + L_2gm_ros + L_2s + R_2gm_ro + R_2 + r_o \right) \\ & R_1 \left( C_LL_Ls^2 + 1 \right) \left( C_2L_2R_2gm_ros^2 + C_2L_2R_2s^2 + C_2L_2ros^2 + L_2gm_ros + L_2s + R_2gm_ro + R_2 + r_o \right) \\ & R_1 \left( C_2L_2R_2gm_ros^3 + C_2L_2R_1ros^3 + C_2L_2R_2s^2 + C_2L_2ros^2 + C_2L
```

$$H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 L_L R_2 s^4 + C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_2 C_L L_2 R_1 R_2 s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 C_L L_2 R_1 r_$$

**10.50** INVALID-ORDER-50 
$$Z(s) = \left(R_1, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$$

$$H(s) = \frac{1}{C_2C_LL_2L_LR_1R_2R_Lg_mr_os^4 + C_2C_LL_2L_LR_1R_2R_Ls^4 + C_2C_LL_2L_LR_1R_2r_os^4 + C_2L_2L_LR_1R_2g_mr_os^3 + C_2L_2L_LR_1r_os^3 + C_2L_2L_2R_1r_os^3 + C_2L_2L_2R_1r_os^3 + C_2L_2L_2R_1r_os^3 + C_2L_2R_1r_os^3 + C_2L_2R_1r_os$$

10.51 INVALID-ORDER-51 
$$Z(s) = \left(R_1, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_Ls}{C_LL_Ls^2+1} + R_L\right)$$

$$H(s) = \frac{R_1 \left( C_L L_L R_L s^2 + L_L s + R_1 \right)}{C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^4 + C_2 C_L L_2 L_L R_1 r_o s^4 + C_2 C_L L_2 L_L R_2 r_o s^4 + C_2 C_$$

10.52 INVALID-ORDER-52 
$$Z(s) = \left(R_1, \ \frac{L_2s}{C_2L_2s^2+1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$$

$$H(s) = \frac{1}{C_2C_LL_2L_LR_1R_2g_mr_os^4 + C_2C_LL_2L_LR_1R_2s^4 + C_2C_LL_2L_LR_1r_os^4 + C_2C_LL_2L_LR_2r_os^4 + C_2C_LL_2L_LR_1r_os^4 + C_2C_LL_2L_RR_1r_os^4 + C_2C_LL_2L_RR_1r_os^4 + C_2C_LL_2L_RR_1r_os^4 + C_2C_LL_2R_1R_2r_os^4 + C_2C_LL_2R_2r_os^4 + C_2C_LL_2R_2r_os^2 + C_2C_LL_2R_2r_os^2 + C_2C_LL_2R_2r_os^2 + C_2C_LL_2R_2r_os^2 + C_2C_LL_2R_2r_os^2$$

$$\begin{aligned} \textbf{10.53} \quad \textbf{INVALID-ORDER-53} \ Z(s) &= \left( R_1, \ \frac{R_2 \left( L_2 s + \frac{1}{C_2 s} \right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s} \right) \\ H(s) &= \frac{R_1 \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 C_L R_1 R_2 r_o s^2 + C_2 L_2 r_o s^2 + C_2 L_2 r_o s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + R_2 + r_o \end{aligned}$$

**10.54** INVALID-ORDER-54 
$$Z(s) = \left(R_1, \ \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{R_1 R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 R_1 R_2 R_L r_o s^3 + C_2 C_L L_2 R_1 R_2 r_o s^2 + C_2 L_2 R_1 R_2 r_o s^2 + C_2 L_2 R_1 r_o s^2 +$$

**10.55** INVALID-ORDER-55 
$$Z(s) = \left(R_1, \ \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_Ls}\right)$$

 $H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 C_L R_2 R_L r_o s^2 + C_2 L_2 R_2 r_o s^$ 

**10.56** INVALID-ORDER-56 
$$Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$$

 $H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 r_o s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 L_L r_o s^4 + C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 C_L L_2 R_2 r_o$ 

10.57 INVALID-ORDER-57 
$$Z(s) = \left(R_1, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

 $H(s) = \frac{L_L R_1 s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^4 + C_2 C_L L_2 L_L R_1 r_o s^4 + C_2 C_L L_2 L_L R_2 r_o s^4 + C_2 C_L L_2 L_L R_2 r_o s^3 + C_2 L_2 L_L R_2 r_o s^3 + C_2 L_2 L_L R_2 r_o s^2 + C_2 L_2 R_1 r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_1 r_o s^2 + C_2 L_2 R_2 r_o s^2 +$ 

10.58 INVALID-ORDER-58  $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_2 L_L R_2 s^4 + C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_2 C_L L_2 R_1 R_2 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 C_L R_2 R_2 r_o s^3 + C_2$ 

10.59 INVALID-ORDER-59  $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_I} + \frac{1}{L_Ls}}\right)$ 

 $H(s) = \frac{L}{C_2C_LL_2L_LR_1R_2R_Lg_mr_os^4 + C_2C_LL_2L_LR_1R_2R_Ls^4 + C_2C_LL_2L_LR_1R_Lr_os^4 + C_2C_LL_LR_1R_2R_Lr_os^4 + C_2C_LL_LR_1R_2R_Lr_os^3 + C_2L_2L_LR_1R_2g_mr_os^3 + C_2L_2L_LR_1r_os^3 + C_2L_2L_RR_1r_os^3 + C_2L_2L_RR_1r_os$ 

**10.60** INVALID-ORDER-60 
$$Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right)$$

 $H(s) = \frac{R_1 \left( C_L L_L R_L s^2 + L_L s + R_L \right) \left( C_2 L_2 R_2 g_m + L_L s + R_L \right) \left( C_2 L_2 R_2$ 

10.61 INVALID-ORDER-61  $Z(s) = \left(R_1, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$ 

 $H(s) = \frac{1}{C_2C_LL_2L_LR_1R_2g_mr_os^4 + C_2C_LL_2L_LR_1R_2s^4 + C_2C_LL_2L_LR_1r_os^4 + C_2C_LL_2L_LR_2r_os^4 + C_2C_LL_2L_LR_1r_os^4 + C_2C_LL_2L_LR_1r_os^4 + C_2C_LL_2L_LR_1r_os^4 + C_2C_LL_2R_1R_2R_2r_os^4 + C_2C_LL_2R_1R_2R_2r_os^4 + C_2C_LL_2R_1R_2R_2r_os^4 + C_2C_LL_2R_1R_2R_2r_os^4 + C_2C_LL_2R_1R_2R_2r_os^4 + C_2C_LL_2R_1R_2r_os^4 + C_2C_LL_2R_2r_os^4 + C_2C_LL_2R_2r_os^2 + C_2C_LL_2R_2r_os^2 + C_2C_LL_2R_2r_os^2 + C_2C_LL_2R_2r_os^2 + C_2C_LL_2R_2r_os$ 

10.62 INVALID-ORDER-62  $Z(s) = (L_1 s, R_2, \infty, \infty, \infty, R_L)$ 

$$H(s) = \frac{L_1 R_L s \left( R_2 g_m r_o + R_2 + r_o \right)}{L_1 R_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + R_2 R_L + R_2 r_o + R_L r_o}$$

10.63 INVALID-ORDER-63  $Z(s) = \left(L_1 s, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_1 s \left(C_L L_L s^2 + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_L L_1 R_2 g_m r_o s^2 + C_L L_1 R_2 s^2 + C_L L_1 r_o s^2 + C_L L_L R_2 s^2 + C_L L_L r_o s^2 + C_L R_2 r_o s + R_2 + r_o}$$

10.64 INVALID-ORDER-64  $Z(s) = \left(L_1 s, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

10.65 INVALID-ORDER-65  $Z(s) = \left(L_1 s, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_1 s \left(C_L L_L s^2 + C_L R_L s + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_L L_1 R_2 g_m r_o s^2 + C_L L_1 R_2 s^2 + C_L L_1 r_o s^2 + C_L L_L R_2 s^2 + C_L L_L r_o s^2 + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_L r_o s + R_2 + r_o}$$

**10.66** INVALID-ORDER-66  $Z(s) = \left(L_1 s, \ R_2, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_{1}L_{L}R_{2}s^{2}\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{L}L_{1}L_{L}R_{2}g_{m}r_{o}s^{3} + C_{L}L_{1}L_{L}R_{2}s^{3} + C_{L}L_{1}L_{L}R_{2}r_{o}s^{2} + L_{1}L_{L}R_{2}g_{m}r_{o}s^{2} + L_{1}L_{L}r_{o}s^{2} + L_{1}L$$

10.67 INVALID-ORDER-67  $Z(s) = \left(L_1 s, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{L_{1}s\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)}{C_{L}L_{1}L_{L}R_{2}g_{m}r_{o}s^{3} + C_{L}L_{1}L_{L}r_{o}s^{3} + C_{L}L_{1}L_{2}R_{2}s^{2} + C_{L}L_{L}R_{2}r_{o}s^{2} + C_{L}L_{L}R_{L}r_{o}s^{2} + L_{1}R_{2}g_{m}r_{o}s + L_{1}R_{2}s + L_{1}r_{o}s + R_{2}R_{L} + R_{2}r_{o} + R_{L}r_{o}s + R_{2}R_{L}r_{o}s +$$

10.68 INVALID-ORDER-68  $Z(s) = \left(L_1 s, R_2, \infty, \infty, \infty, \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

$$H(s) = \frac{L_1 R_L s \left(C_L L_L s^2 + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_L L_1 L_L R_2 g_m r_o s^3 + C_L L_1 L_L r_o s^3 + C_L L_1 R_2 R_L g_m r_o s^2 + C_L L_1 R_2 r_o s^2 + C_L L_L R_2 r_o s^2 + C_$$

10.69 INVALID-ORDER-69  $Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_1 s \left(C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 r_o s^3 + C_2 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L r_o s + 1}$$

10.70 INVALID-ORDER-70  $Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

10.71 INVALID-ORDER-71  $Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}R_{L}r_{o}s^{2}+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}s^{2}+C_{L}R_{L}s+C_{L}r_{o}s+1}$$

10.72 INVALID-ORDER-72 
$$Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{L}r_{o}s^{3}+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}s^{2}+C_{L}L_{2}s^{2}+C_{L}r_{o}s+1}$$

10.73 INVALID-ORDER-73 
$$Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

10.74 INVALID-ORDER-74 
$$Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)}{C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{L}r_{o}s^{3} + C_{2}C_{L}R_{L}r_{o}s^{2} + C_{2}r_{o}s + C_{L}L_{1}q_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} + C_{L}L_{L}s^{2} + C_{L}R_{L}s + C_{L}r_{o}s + 1}$$

10.75 INVALID-ORDER-75 
$$Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{L_{1}L_{L}R_{L}s^{2}\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{1}L_{L}R_{L}r_{o}s^{4} + C_{2}L_{1}L_{L}r_{o}s^{3} + C_{2}L_{1}R_{L}r_{o}s^{2} + C_{L}L_{1}L_{L}R_{L}g_{m}r_{o}s^{3} + C_{L}L_{1}L_{L}R_{L}r_{o}s^{2} + L_{1}L_{L}g_{m}r_{o}s^{2} + L_{1}L_{L}g_{m}r_{o}s^{2} + L_{1}L_{L}g_{m}r_{o}s + L_{1}R_{L}s + L_{L}R_{L}s + L_{L}r_{o}s + R_{L}r_{o}s + L_{L}R_{L}s +$$

10.76 INVALID-ORDER-76  $Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)}{C_{2}C_{L}L_{1}L_{L}r_{o}s^{4} + C_{2}C_{L}L_{L}R_{L}r_{o}s^{3} + C_{2}L_{1}r_{o}s^{2} + C_{2}L_{L}r_{o}s^{2} + C_{2}R_{L}r_{o}s + C_{L}L_{1}L_{L}g_{m}r_{o}s^{3} + C_{L}L_{1}L_{L}s^{3} + C_{L}L_{L}R_{L}s^{2} + C_{L}L_{L}r_{o}s^{2} + L_{1}g_{m}r_{o}s + L_{1}s + L_{L}s + R_{L} + r_{o}s^{2}}$$

10.77 INVALID-ORDER-77 
$$Z(s) = \left(L_1 s, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

10.78 INVALID-ORDER-78  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{2}R_{2}r_{o}s + C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}r_{o}s^{2} + C_{L}R_{2}r_{o}s + R_{2} + r_{o}}$$

10.79 INVALID-ORDER-79  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{L_1 R_L s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_1 R_2 R_L r_o s^3 + C_2 L_1 R_2 r_o s^2 + C_2 R_2 R_L r_o s + C_L L_1 R_2 R_L g_m r_o s^2 + C_L L_1 R_2 R_L s^2 + C_L L_1 R_L r_o s^2 + C_L R_2 R_L r_o s + L_1 R_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + R_2 R_L + R_2 r_o + R_L r_o s^2 + C_L R_2 R_L r_o s + L_1 R_2 r_o s + L_1$$

10.80 INVALID-ORDER-80  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}R_{2}R_{L}r_{o}s^{2}+C_{2}R_{2}r_{o}s+C_{L}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{L}L_{1}R_{2}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}R_{2}R_{L}s+C_{L}R_{2}r_{o}s+C_{L}R_{L}r_{o}s+R_{2}+r_{o}}$$

10.81 INVALID-ORDER-81 
$$Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{L}R_{2}r_{o}s+C_{L}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{L}L_{1}R_{2}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}L_{L}R_{2}s^{2}+C_{L}L_{L}r_{o}s^{2}+$$

10.82 INVALID-ORDER-82  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_1 L_L s^2 \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_1 L_L R_2 r_o s^4 + C_2 L_1 R_2 r_o s^2 + C_L L_1 L_L R_2 g_m r_o s^3 + C_L L_1 L_L R_2 s^3 + C_L L_1 L_L R_2 r_o s^3 + C_L L_1 L_L R_2 r_o s^2 + L_1 R_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + L_2 R_2 r_o s + L_1 R_2 r_o s^2 + L_1 R_2 r_o s^2$$

**10.83** INVALID-ORDER-83  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{2}C_{L}L_{2}R_{2}r_{o}s^{2} + C_{2}R_{2}r_{o}s + C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C$$

10.84 INVALID-ORDER-84  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_1 L_L R_L s^2 \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_2 C_L L_1 L_L R_2 R_L r_o s^4 + C_2 L_1 L_L R_2 R_L r_o s^2 + C_2 L_L R_2 R_L r_o s^2 + C_L L_1 L_L R_2 R_L g_m r_o s^3 + C_L L_1 L_L R_2 R_L r_o s^3 + C_L L_1 L_L R_2 R_L r_o s^2 + L_1 L_L R_2 r_o s^3 + C_L L_1 R_2 r_o$$

**10.85** INVALID-ORDER-85  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{4} + C_{2}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{2}L_{1}R_{2}r_{o}s^{2} + C_{2}L_{L}R_{2}r_{o}s^{2} + C_{2}L_{L}R_{2}r_{o}s^{2} + C_{L}L_{L}L_{L}R_{2}s^{3} + C_{L}L_{L}L_{L}R_{2}r_{o}s^{3} + C_{L}L_{L}R_{2}r_{o}s^{2} + C_{L}L_{$$

**10.86** INVALID-ORDER-86  $Z(s) = \left(L_1 s, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

$$H(s) = \frac{L_1 R_L s \left(C_L L_L s^2 + 1\right) \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_1 L_L R_2 r_o s^4 + C_2 C_L L_1 R_2 R_L r_o s^3 + C_2 L_1 R_2 r_o s^2 + C_2 R_2 R_L r_o s + C_L L_1 L_L R_2 g_m r_o s^3 + C_L L_1 L_L R_2 s^3 + C_L L_1 R_2 R_L g_m r_o s^2 + C_L L_1 R_2 R_L s^2 + C_L L_1 R_2 R_L$$

**10.87** INVALID-ORDER-87  $Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3} + C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}R_{2}r_{o}s^{2} + C_{2}R_{2}s + C_{2}r_{o}s + C_{L}L_{1}g_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} + C_{L}r_{o}s + 1}$$

10.88 INVALID-ORDER-88  $Z(s) = \left(L_1 s, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{L_1 R_L s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 R_2 R_L g_m r_o s^3 + C_2 C_L L_1 R_L r_o s^3 + C_2 C_L L_1 R_L r_o s^3 + C_2 C_L R_2 R_L r_o s^2 + C_2 L_1 R_2 g_m r_o s^2 + C_2 L_1 R_2 r_o s + C_2 R_L r_o s + C_2 R_$$

**10.89** INVALID-ORDER-89  $Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}R_{2}R_{L}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{L}r_{o}s^{2}+C_{2}R_{2}s+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}s^{2}+C_{L}R_{L}s+C_{L}r_{o}s+1}$$

**10.90** INVALID-ORDER-90 
$$Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{L}R_{2}s^{3}+C_{2}C_{L}L_{L}r_{o}s^{3}+C_{2}C_{L}L_{2}r_{o}s^{2}+C_{2}R_{2}s+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}$$

**10.91** INVALID-ORDER-91 
$$Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{L_1 L_1 s^2 \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_2 C_L L_1 L_L R_2 g_m r_o s^4 + C_2 C_L L_1 L_L r_o s^4 + C_2 C_L L_1 L_L r_o s^3 + C_2 L_1 R_2 g_m r_o s^2 + C_2 L_1 R_2 s^2 + C_2 L_1 R_2$$

**10.92** INVALID-ORDER-92 
$$Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{L}r_{o}s^{3} + C_{2}C_{L}L_{L}r_{o}s^{3} + C_{2}C_{L}L_{L}r_{o}s^{3} + C_{2}C_{L}L_{L}r_{o}s^{3} + C_{2}C_{L}R_{2}r_{o}s^{2} + C_{2}C_{L}R_{2}r_{o}s^{2} + C_{2}R_{2}s + C_{2}r_{o}s + C_{L}L_{1}g_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} + C_$$

**10.93** INVALID-ORDER-93 
$$Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{L_1 L_L R_2 s^2 \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 L_L R_2 R_L g_m r_o s^4 + C_2 C_L L_1 L_L R_2 r_o s^4 + C_2 C_L L_1 L_L R_2 r_o s^3 + C_2 L_1 L_L R_2 g_m r_o s^3 + C_2 L_1 L_L R_2 r_o s^3 + C_2 L_1 R_$$

**10.94** INVALID-ORDER-94 
$$Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{1}L_{L}R_{2}s^{4} + C_{2}C_{L}L_{1}L_{L}r_{o}s^{4} + C_{2}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{2}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{2}L_{L}R_{2}r_{o}s^{2} + C_{2}L_{1}R_{2}s^{2} + C_{2}L_{L}r_{o}s^{2} + C_{2}L_{L}r_{o}s^{2} + C_{2}R_{L}r_{o}s + C_{2}R_{L}r_{o}s + C_{2}R_{L}r_{o}s + C_{L}L_{L}L_{L}r_{o}s^{3} + C_{L}L_{L}L_{L}r_{o}s^{3} + C_{L}L_{L}L_{L}r_{o}s^{2} + C_{L}L_{L}r_{o}s^{2} + C_{L}$$

10.95 INVALID-ORDER-95 
$$Z(s) = \left(L_1 s, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{L_1 R_L s \left(C_L L_L s^2 + 1\right) \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 L_L R_2 g_m r_o s^4 + C_2 C_L L_1 L_L R_2 s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^3 + C_2 C_L L_1 R_2 R_L s^3 + C_2$$

10.96 INVALID-ORDER-96  $Z(s) = \left(L_1 s, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \infty\right)$ 

$$H(s) = \frac{L_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_2 L_1 L_2 g_m r_o s^3 + C_2 L_1 L_2 s^3 + C_2 L_1 r_o s^2 + C_2 L_2 R_L s^2 + C_2 L_2 r_o s^2 + C_2 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o r_o s^2 + C_2 R_L r_o s^2 + C_2 R_L r_o s^2 + C_2 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o r_o s^2 + C_2 R_L r_o s^$$

**10.97** INVALID-ORDER-97 
$$Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_1 s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 L_2 g_m r_o s^4 + C_2 C_L L_1 L_2 s^4 + C_2 C_L L_1 r_o s^3 + C_2 L_L L_2 r_o s^3 + C_2 L_2 s^2 + C_2 r_o s + C_L L_1 g_m r_o s^2 + C_L L_1 s^2 + C_L r_o s + 1}$$

10.98 INVALID-ORDER-98  $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{L_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 L_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_L r_o s^3 + C_2 L_1 L_2 g_m r_o s^3 + C_2 L_1 L_2 s^3 + C_2 L_1 r_o s^2 + C_2 L_2 R_L s^2 + C_2 L_2 r_o s^2 + C_2 L_2 R_L s^2 + C_2 L_2 R_L r_o s^2 + C_2 L_1 R_L g_m r_o s^2 + C_L R_L r_o s + L_1 g_m r_o s^2 + C_L R_L r_o s^2 + C_L R_L r_o s^2 + C_L R_L r_o s^2 + C_L$ 

**10.99** INVALID-ORDER-99  $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{2}R_{L}s^{3}+C_{2}C_{L}L_{2}r_{o}s^{3}+C_{2}C_{L}R_{L}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}s^{2}+C_{L}R_{L}s+C_{L}r_{o}s+1}$ 

**10.100** INVALID-ORDER-100  $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{2}L_{s}s^{4}+C_{2}C_{L}L_{2}r_{o}s^{3}+C_{2}C_{L}L_{L}r_{o}s^{3}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}s^{2$ 

**10.101** INVALID-ORDER-101  $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_1 L_L s^2 \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 L_2 L_L g_m r_o s^5 + C_2 C_L L_1 L_L r_o s^4 + C_2 C_L L_2 L_L r_o s^4 + C_2 L_1 L_2 g_m r_o s^3 + C_2 L_1 L_2 s^3 + C_2 L_1 r_o s^2 + C_2 L_2 L_L s^3 + C_2 L_1 r_o s^2 + C_2 L_2 L_L r_o s^3 + C_L L_1 L_L g_m r_o s^3 + C_L L_1 L_$ 

**10.102** INVALID-ORDER-102  $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{2}L_{2}s^{4} + C_{2}C_{L}L_{2}r_{o}s^{3} + C_{2}C_{L}L_{2}r_{o}s^{3} + C_{2}C_{L}R_{L}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + C_{L}L_{1}g_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} +$ 

10.103 INVALID-ORDER-103  $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

**10.104** INVALID-ORDER-104  $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{1}L_{2}L_{g}g_{m}r_{o}s^{5} + C_{2}C_{L}L_{1}L_{L}r_{o}s^{4} + C_{2}C_{L}L_{2}L_{L}R_{L}s^{4} + C_{2}C_{L}L_{2}L_{L}r_{o}s^{4} + C_{2}C_{L}L_{2}L_{L}r_{o}s^{3} + C_{2}L_{1}L_{2}g_{m}r_{o}s^{3} + C_{2}L_{1}L_{2}s^{3} + C_{2}L_{2}L_{L}s^{3} + C_{2}L_{2}L_{L}s^{3} + C_{2}L_{2}R_{L}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{2}L_{L}r_{o}s^{2} + C_{2}L_{L}r_{o}s^{2}$ 

10.105 INVALID-ORDER-105  $Z(s) = \left(L_1 s, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{L_1 R_L s \left(C_L L_L s^2 + 1\right) \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 L_2 L_L g_m r_o s^5 + C_2 C_L L_1 L_2 R_L g_m r_o s^4 + C_2 C_L L_1 L_2 R_L s^4 + C_2 C_L L_2 R_L r_o s^3 + C_2 L_1 L_2 R_L r_o s^3 + C_2 L_2 R_L r_o s^3 + C_2$ 

 $H(s) = \frac{L_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_2 L_1 L_2 a_m r_o s^3 + C_2 L_1 R_2 a_m r_o s^2 + C_2 L_1 R_2 s^2 + C_2 L_1 r_o s^2 + C_2 L_2 R_L s^2 + C_2 L_2 r_o s^2 + C_2 R_2 R_L s + C_2 R_2 r_o s + C_2 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o r_o s^2 + C_2 R_2 r_o s^2 + C_$ **10.107** INVALID-ORDER-107  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)$  $H(s) = \frac{L_{1}s\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3} + C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{2}r_{o}s^{3} + C_{2}C_{L}R_{2}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}R_{2}s + C_{2}r_{o}s + C_{L}L_{1}g_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} + C_{L}r_{o}s + 1}{C_{2}C_{L}L_{1}L_{2}s^{4} + C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{2}r_{o}s^{3} + C_{2}C_{L}R_{2}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}R_{2}s + C_{2}r_{o}s + C_{L}L_{1}g_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} + C_{L$ **10.108** INVALID-ORDER-108  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$  $L_1R_Ls\left(C_2L_2g_mr_os^2 + C_2L_2s^2 + C_2R_2g_mr_os + C_2R_2s + C_2r_os + g_mr_o + 1\right)$  $H(s) = \frac{L_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_2 C_L L_1 L_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^3 + C_2 C_L L_1 R_2 R_L g_m r_o s^3 + C_2 L_1 L_2 g_m r_o s^3 + C_2 L_1 R_2 g_m r_o s^3 + C_2 L_2 R_2 g_m r_o s^3 + C_2 L_$ **10.109** INVALID-ORDER-109  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}s^{3}+C_{2}C_{L}L_{2}r_{o}s^{3}+C_{2}C_{L}L_{2}r_{o}s^{3}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}s+C_{2}r_{o}s+C_{L}L_{1}q_{m}r_{o}s^{2}+C_{L}L_{1}g_{m}r_{o}s^{2}+$ **10.110** INVALID-ORDER-110  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$  $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}s^{3}+C_{2}C_{L}$ **10.111** INVALID-ORDER-111  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ **10.112** INVALID-ORDER-112  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}R_{2}g_{m}r_{o}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{2}R_{L}s^{3} + C_{2}C_{L}L_{2}r_{o}s^{3} + C_{2}C_{L}R_{2}r_{o}s^{2} + C_$ **10.113** INVALID-ORDER-113  $Z(s) = \left(L_1 s, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

**10.106** INVALID-ORDER-106  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$ 

 $H(s) = \frac{1}{C_{2}C_{L}L_{1}L_{2}L_{L}R_{L}q_{m}r_{o}s^{5} + C_{2}C_{L}L_{1}L_{2}L_{L}R_{L}s^{5} + C_{2}C_{L}L_{1}L_{L}R_{2}R_{L}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}L_{L}R_{2}R_{L}s^{4} + C_{2}C_{L}L_{1}L_{L}R_{L}r_{o}s^{4} + C_{2}C_{L}L_{L}L_{L}R_{L}r_{o}s^{4} + C_{2}C_{L}L_{L}R_{L}r_{o}s^{4} + C_{2}C_{L}L_{L}R_{L}r_{o}s^{4}$ 

**10.114** INVALID-ORDER-114  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}L_{L}L_{L}R_{L}s^{2} + C_{2}L_{L}L_{L}R_{L}s^{2} + C_{2}L_{L}L_{$ 

**10.115** INVALID-ORDER-115  $Z(s) = \left(L_1 s, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_2 C_L L_1 L_2 L_L g_m r_o s^5 + C_2 C_L L_1 L_2 L_L s^5 + C_2 C_L L_1 L_2 R_L g_m r_o s^4 + C_2 C_L L_1 L_L R_2 g_m r_o s^4 + C_2 C_L L_1 R_2 g_m r_o s^4 + C_2 C_L R_2 g_m r_o s^4 + C_$ 

**10.116** INVALID-ORDER-116  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{L_1 R_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 L_1 L_2 R_2 g_m r_o s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_2 R_2 R_L s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_L r_o s^2 + L_1 L_2 g_m r_o s^2 + L_1 L_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + L_2 R_L s + L_2 r_o s + R_2 R_L + R_2 r_o + R_L r_o}$ 

**10.117** INVALID-ORDER-117  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + L_{2}g_{m}r_{o}s + L_{2}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{2}C_{L}L_{1}L_{2}R_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}r_{o}s^{4} + C_{2}C_{L}L_{2}R_{2}r_{o}s^{3} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{L}L_{1}L_{2}g_{m}r_{o}s^{3} + C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}r_{o}s^{2} + C_{L}L_{1}r_{o}s^{$ 

**10.118** INVALID-ORDER-118  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{L_1 R_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_1 L_2 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 L_2 R_L g_m r_o s^4 + C_2 C_L L_1 L_2 R_L g_m r_o s^3 + C_2 L_1 L_2 R_2 g_m r_o s^3 + C_2 L_2 R_2 g_m r_o s^3 + C_$ 

**10.119** INVALID-ORDER-119  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}g_{m}r_{o}s+L_{2}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{2}C_{L}L_{1}L_{2}R_{2}s^{4}+C_{2}C_{L}L_{1}L_{2}r_{o}s^{4}+C_{2}C_{L}L_{2}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{2}R_{2}r_{o}s^{3}+C_{2}L_{2}R_{2}s^{2}+C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{L}L_{1}L_{2}s^{3}+C_{L}L_{1}R_{2}s^{2}+C_{L}$ 

**10.120** INVALID-ORDER-120  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}g_{m}r_{o}s+L_{2}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{2}C_{L}L_{1}L_{2}R_{2}g_{m}r_{o}s^{4}+C_{2}C_{L}L_{1}L_{2}r_{o}s^{4}+C_{2}C_{L}L_{2}L_{L}r_{o}s^{4}+C_{2}C_{L}L_{2}L_{2}r_{o}s^{3}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{3}+C_{L}L_{1}L_{2}g_{m}r_{o}s^{3}+C_{L}L_{1}L_{2}g_{m}r_{o}s^{2}+C_{L}L_{1}R_{2}g_{m}r_{o}s^{$ 

10.121 INVALID-ORDER-121  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_1 L_L s^2 \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_1 L_2 L_L R_2 g_m r_o s^5 + C_2 C_L L_1 L_2 L_L R_2 s^3 + C_2 L_1 L_2 R_2 g_m r_o s^3 + C_2 L_1 L_2 L_L R_2 s^3 + C_2 L_2 L_L R_2 s^3 + C_$ 

10.123 INVALID-ORDER-123  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$  $H(s) = \frac{1}{C_2C_LL_1L_2L_LR_2R_Lg_mr_os^5 + C_2C_LL_1L_2L_LR_2R_Ls^5 + C_2C_LL_1L_2L_LR_2R_Lr_os^4 + C_2L_1L_2L_LR_2s^4 + C_2L_1L_2L_2R_2s^4 + C_2L_1L_2L_2R_2s^4 + C_2L_1L_2L_2R_2s^4 + C_2L_2L_2R_2s^4 + C_2L_2L_2R$ 10.124 INVALID-ORDER-124  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$  $H(s) = \frac{L_{1}s\left(C_{L}L_{L}R_{L}s^{-} + L_{L}s + C_{L}L_{L}R_{L}s^{-} + L_{L}s + C_{L}L_{L}R_{L}s^{-} + L_{L}s + C_{L}L_{L}R_{L}s^{-} +$ 10.125 INVALID-ORDER-125  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$  $H(s) = \frac{1}{C_2C_LL_1L_2L_LR_2g_mr_os^5 + C_2C_LL_1L_2L_LR_2s^5 + C_2C_LL_1L_2L_Lr_os^5 + C_2C_LL_1L_2R_2g_mr_os^4 + C_2C_LL_1L_2R_Lr_os^4 + C_2C_LL_2L_LR_2r_os^4 + C_2C_LL_2L_LR_2r_os^4 + C_2C_LL_2L_LR_2r_os^4 + C_2C_LL_2L_LR_2r_os^4 + C_2C_LL_2L_LR_2r_os^4 + C_2C_LL_2L_2R_2r_os^4 + C_2C_LL_2R_2r_os^4 + C_2C_LR_2r_os^4 + C_2C_LR_2r_os^4$ **10.126** INVALID-ORDER-126  $Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \right)$  $H(s) = \frac{L_1 R_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 L_1 L_2 R_2 g_m r_o s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_1 R_2 r_o s^2 + C_2 L_2 R_2 R_L s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_L r_o s^2 + C_2 R_2 R_L r_o s + L_1 R_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + R_2 R_L + R_2 r_o + R_L r_o}$ 10.127 INVALID-ORDER-127  $Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$  $H(s) = \frac{L_1 s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_1 L_2 R_2 g_m r_o s^4 + C_2 C_L L_1 L_2 r_o s^4 + C_2 C_L L_1 R_2 r_o s^3 + C_2 C_L L_2 R_2 r_o s^3 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + C_L L_1 R_2 g_m r_o s^2 + C_L L_1 R_2 s^2 + C_L L_1 r_o s^2 + C_L R_2 r_o s + R_2 + r_o}$ 10.128 INVALID-ORDER-128  $Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_7 s}}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$  $\frac{L_{1}R_{L}s\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{2}C_{L}L_{1}L_{2}R_{2}R_{L}g_{m}r_{o}s^{4}+C_{2}C_{L}L_{1}L_{2}R_{L}r_{o}s^{4}+C_{2}C_{L}L_{1}R_{2}R_{L}r_{o}s^{3}+C_{2}L_{1}L_{2}R_{2}g_{m}r_{o}s^{3}+C_{2}L_{1}L_{2}R_{2}s^{3}+C_{2}L_{1}R_{2}r_{o}s^{2}+C_{2}L_{2}R_$ **10.129** INVALID-ORDER-129  $Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}r_{o}s^{2} + L_{2}g_{m}r_{o}s + L_{2}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{2}C_{L}L_{1}L_{2}R_{2}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}L_{2}r_{o}s^{4} + C_{2}C_{L}L_{2}L_{L}r_{o}s^{4} + C_{2}C_{L}L_{2}L_{L}r_{o}s^{4} + C_{2}C_{L}L_{2}R_{L}s^{3} + C_{2}C_{L}L_{2}R_{L}r_{o}s^{3} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{L}L_{1}L_{2}g_{m}r_{o}s^{3} + C_{L}L_{1}L_{2}s^{3} + C_{L}L_{1}R_{2}s^{4} + C_{L}L_{1}R_{2}s^{2} + C_$ 

**10.122** INVALID-ORDER-122  $Z(s) = \left(L_1 s, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{2}C_{L}L_{1}L_{2}R_{2}s^{4}+C_{2}C_{L}L_{1}L_{2}r_{o}s^{4}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{2}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{2}R_{L}r_{o}s^{3}+C_{2}C_{L}L_{2}R_{L}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_$ 

**10.130** INVALID-ORDER-130 
$$Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{2}C_{L}L_{1}L_{2}R_{2}s^{4}+C_{2}C_{L}L_{1}L_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}L_{2}r_{o}s^{4}+C_{2}C_{L}L_{1}L_{2}r_{o}s^{4}+C_{2}C_{L}L_{2}L_{2}r_{o}s^{4}+C_{2}C_{L}L_{2}L_{2}r_{o}s^{4}+C_{2}C_{L}L_{2}R_{2}r_{o}s^{3}+C_{2}L_{2}R_{2}r_{o}s^{3}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}$ 

**10.131** INVALID-ORDER-131 
$$Z(s) = \left(L_1 s, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

 $H(s) = \frac{L_1 L_L s^2 \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_2 C_L L_1 L_2 L_L R_2 g_m r_o s^5 + C_2 C_L L_1 L_2 L_L R_2 s^5 + C_2 C_L L_1 L_2 L_L R_2 r_o s^4 + C_2 L_1 L_2 R_2 g_m r_o s^3 + C_2 L_1 L_2 R_2 g_m r_o s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_2 L_L R_2 s^3 + C_2 L_2 L_L R_2 r_o s^3 + C_2 L_1 L_2 R_2 r_o s^3 + C_2 L_1 L_2 R_2 r_o s^3 + C_2 L_2 L_L R_2 r_o s^3 + C_2 L_2 R_2$ 

**10.132** INVALID-ORDER-132 
$$Z(s) = \left(L_1 s, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{2}L_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{2}C_{L}L_{1}L_{2}R_{2}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}L_{2}r_{o}s^{4} + C_{2}C_{L}L_{1}L_{2}r_{o}s^{4} + C_{2}C_{L}L_{2}L_{2}r_{o}s^{4} + C_{2}C_{L}L_{2}R_{2}r_{o}s^{4} + C_{2}C_{L}L_{2}R_{2}r_$ 

**10.133** INVALID-ORDER-133 
$$Z(s) = \left(L_1 s, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

 $H(s) = \frac{1}{C_2C_LL_1L_2L_LR_2R_Lg_mr_os^5 + C_2C_LL_1L_2L_LR_2R_Ls^5 + C_2C_LL_1L_2L_LR_2R_Lr_os^4 + C_2L_1L_2L_LR_2R_Lr_os^4 + C_2L_1L_2L_LR_2g_mr_os^4 + C_2L_1L_2L_Rg_mr_os^4 + C_2L_1L_2L_Rg_mr_os^4 + C_2L_1L_2L_Rg_mr_os^4 + C_2L_1L_2L_Rg_mr_os^4 + C_2L_1L_2R_2g_mr_os^4 + C_2L_2R_2g_mr_os^4 + C_2L_2R_2g_mr_os^4 + C_2L_2R_2g_mr_os^4 + C_2L_2R_2g_mr_os^4 + C_2R_2g_mr_os^4 + C_2R_2g_mr_os^4 + C_2R_2g_mr_os^4 + C_2R_2g_mr_os^4 + C$ 

**10.134** INVALID-ORDER-134 
$$Z(s) = \left(L_1 s, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}R_{2}s^{2} + L_{L}s + R_{L}\right)\left(C_{2}L_{2}R_{2}g$ 

10.135 INVALID-ORDER-135 
$$Z(s) = \left(L_1 s, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

 $H(s) = \frac{1}{C_2C_LL_1L_2L_LR_2g_mr_os^5 + C_2C_LL_1L_2L_LR_2s^5 + C_2C_LL_1L_2L_Lr_os^5 + C_2C_LL_1L_2R_2R_Lg_mr_os^4 + C_2C_LL_1L_2R_Lr_os^4 + C_2C_LL_1R_2R_Lr_os^4 + C_2C_LR_1R_2R_Lr_os^4 + C_2C$ 

10.136 INVALID-ORDER-136  $Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_L (R_2 g_m r_o + R_2 + r_o)}{C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + R_2 g_m r_o + R_2 + r_o}$$

10.137 INVALID-ORDER-137  $Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{R_2 g_m r_o + R_2 + r_o}{s \left( C_1 C_L R_2 r_o s + C_1 R_2 + C_1 r_o + C_L R_2 g_m r_o + C_L R_2 + C_L r_o \right)}$$

10.138 INVALID-ORDER-138 
$$Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{L}R_{L}s + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{L}R_{2}R_{L}s + C_{1}C_{L}R_{2}r_{o}s + C_{1}C_{L}R_{L}r_{o}s + C_{1}R_{2} + C_{1}r_{o} + C_{L}R_{2}g_{m}r_{o} + C_{L}R_{2} + C_{L}r_{o}\right)}$$

10.139 INVALID-ORDER-139  $Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_L L_L s^2 + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{s \left(C_1 C_L L_L R_2 s^2 + C_1 C_L L_L r_o s^2 + C_1 C_L R_2 r_o s + C_1 R_2 + C_1 r_o + C_L R_2 g_m r_o + C_L R_2 + C_L r_o\right)}$$

10.140 INVALID-ORDER-140  $Z(s) = \left(\frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_L R_2 r_o s^3 + C_1 L_L R_2 s^2 + C_1 L_L r_o s^2 + C_1 L_L R_2 r_o s + C_L L_L R_2 g_m r_o s^2 + C_L L_L R_2 s^2 + C_L L_L r_o s^2 + R_2 g_m r_o + R_2 + r_o}$$

10.141 INVALID-ORDER-141  $Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_L L_L s^2 + C_L R_L s + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{s \left(C_1 C_L L_L R_2 s^2 + C_1 C_L L_L r_o s^2 + C_1 C_L R_2 R_L s + C_1 C_L R_2 r_o s + C_1 C_L R_L r_o s + C_1 R_2 + C_1 r_o + C_L R_2 g_m r_o + C_L R_2 + C_L r_o\right)}$$

**10.142** INVALID-ORDER-142  $Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_L R_L s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_L R_2 R_L r_o s^3 + C_1 L_L R_2 r_o s^2 + C_1 L_L R_L r_o s^2 + C_1 R_2 R_L r_o s + C_L L_L R_2 R_L g_m r_o s^2 + C_L L_L R_2 R_L s^2 + C_L L_L R_2 r_o s^2 + L_L R_2 g_m r_o s + L_L R_2 s + L_L r_o s + R_2 R_L g_m r_o + R_2 R_L + R_L r_o s^2 + R_2 R_L r_o s + R_2 R_L r_o s$$

10.143 INVALID-ORDER-143  $Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)}{C_{1}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{L}r_{o}s^{3} + C_{1}L_{L}R_{2}s^{2} + C_{1}L_{L}r_{o}s^{2} + C_{1}R_{2}R_{L}s + C_{1}R_{2}r_{o}s + C_{1}R_{L}r_{o}s + C_{L}L_{L}R_{2}g_{m}r_{o}s^{2} + C_{L}L_{L}R_{2}s^{2} + C_{L}L_{L}r_{o}s^{2} + R_{2}g_{m}r_{o} + R_{2} + r_{o}s^{2}}$$

**10.144** INVALID-ORDER-144  $Z(s) = \left(\frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

$$H(s) = \frac{R_L \left( C_L L_L s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_L R_2 r_o s^3 + C_1 C_L L_L R_2 r_o s^3 + C_1 C_L L_R R_2 r_o s^2 + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + C_L L_L R_2 g_m r_o s^2 + C_L L_L R_2 s^2 + C_L L_L R_2 s^2 + C_L L_L R_2 r_o s^3 + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_2 R_L s + C_L R_2 r_o s + C_L R_2 r_o s + C_L R_2 r_o s^2 +$$

10.145 INVALID-ORDER-145  $Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{C_2 r_o s + g_m r_o + 1}{s \left( C_1 C_2 r_o s + C_1 C_L r_o s + C_1 + C_2 C_L r_o s + C_L g_m r_o + C_L \right)}$$

10.146 INVALID-ORDER-146  $Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}R_{L}s + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}R_{L}r_{o}s^{2} + C_{1}C_{2}r_{o}s + C_{1}C_{L}R_{L}s + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$$

10.147 INVALID-ORDER-147 
$$Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_L L_L s^2 + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{s \left(C_1 C_2 C_L L_L r_o s^3 + C_1 C_2 r_o s + C_1 C_L L_L s^2 + C_1 C_L r_o s + C_1 + C_2 C_L r_o s + C_L g_m r_o + C_L\right)}$$

10.148 INVALID-ORDER-148 
$$Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{L_L s \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_L r_o s^3 + C_1 C_L L_L r_o s^3 + C_1 L_L s^2 + C_1 r_o s + C_2 C_L L_L r_o s^3 + C_2 r_o s + C_L L_L g_m r_o s^2 + C_L L_L s^2 + g_m r_o + 1}$$

**10.149** INVALID-ORDER-149 
$$Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{L}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{L}r_{o}s^{2} + C_{1}C_{L}r_{o}s + C_{1}C_{L}L_{L}s^{2} + C_{1}C_{L}R_{L}s + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$$

**10.150** INVALID-ORDER-150 
$$Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{L_L R_L s \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_L R_L r_o s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 L_L R_L s^2 + C_1 L_L r_o s^2 + C_2 L_L R_L r_o s^3 + C_2 L_L r_o s^2 + C_2 R_L r_o s^2 + C_2 R_L r_o s^2 + C_L L_L R_L g_m r_o s^2 + L_L g_m r_o s + L_L s + R_L g_m r_o s + R_L s$$

**10.151** INVALID-ORDER-151  $Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)}{C_{1}C_{2}C_{L}L_{L}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{L}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{L}s^{3} + C_{1}C_{L}L_{L}r_{o}s^{3} + C_{1}L_{L}s^{2} + C_{1}R_{L}s + C_{1}r_{o}s + C_{2}C_{L}L_{L}r_{o}s^{3} + C_{2}r_{o}s + C_{L}L_{L}g_{m}r_{o}s^{2} + C_{L}L_{L}s^{2} + g_{m}r_{o} + 1}}$$

10.152 INVALID-ORDER-152 
$$Z(s) = \left(\frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_L R_L r_o s^4 + C_1 C_2 R_L r_o s^2 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L r_o s^3 + C_1 C_L R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 C_L L_L r_o s^3 + C_2 C_L R_L r_o s^2 + C_2 r_o s + C_L L_L g_m r_o s^2 + C_L R_L g_m r_o s + C_L R_L g_m r_o s$$

**10.153** INVALID-ORDER-153  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o}{s \left(C_1 C_2 R_2 r_o s + C_1 C_L R_2 r_o s + C_1 R_2 + C_1 r_o + C_2 C_L R_2 r_o s + C_L R_2 g_m r_o + C_L R_2 + C_L r_o\right)}$$

**10.154** INVALID-ORDER-154  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{2}C_{L}R_{2}R_{L}r_{o}s^{2} + C_{1}C_{2}R_{2}r_{o}s + C_{1}C_{L}R_{2}r_{o}s +$$

**10.155** INVALID-ORDER-155  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}L_{L}s^{2} + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{2}R_{2}r_{o}s + C_{1}C_{L}L_{L}R_{2}s^{2} + C_{1}C_{L}L_{L}r_{o}s^{2} + C_{1}C_{L}R_{2}r_{o}s + C_{1}R_{2} + C_{1}r_{o} + C_{2}C_{L}R_{2}r_{o}s + C_{L}R_{2}g_{m}r_{o} + C_{L}R_{2} + C_{L}r_{o}\right)}$$

**10.156** INVALID-ORDER-156  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_L R_2 r_o s^3 + C_1 C_L L_L R_2 r_o s^3 + C_1 L_L R_2 s^2 + C_1 L_L r_o s^2 + C_1 R_2 r_o s + C_2 C_L L_L R_2 r_o s^3 + C_2 R_2 r_o s + C_L L_L R_2 g_m r_o s^2 + C_L L_L R_2 s^2 + C_L L_L r_o s^2 + R_2 g_m r_o + R_2 + r_o}$$

**10.157** INVALID-ORDER-157  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{2}R_{L}r_{o}s^{2} + C_{1}C_{L}L_{L}R_{2}s^{2} + C_{1}C_{L}L_{L}r_{o}s^{2} + C_{1}C_{L}R_{2}r_{o}s + C_{1}C_$$

**10.158** INVALID-ORDER-158  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_L R_L s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_L R_2 R_L r_o s^3 + C_1 C_L L_L R_2 R_L s^2 + C_1 L_L R_2 r_o s^2 + C_1 L_L R_2 r_o s^2 + C_1 L_L R_2 r_o s^3 + C_2 L_L R_2 R_L r_o s^3 + C_2 L_L R_2 R_L r_o s^3 + C_2 L_L R_2 R_L r_o s^2 + C_2 L_L R_2$$

**10.159** INVALID-ORDER-159  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{\left(C_{L}L_{L}R_{2}s^{2} + L_{L}s + R_{L}\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{2}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{1}L_{L}R_{2}s^{2} + C_{1}L_{L}R_{2}s^{2} + C_{1}L_{L}R_{2}s^{2} + C_{1}L_{L}R_{2}r_{o}s^{3} + C_{1}R_{L}r_{o}s + C_{2}C_{L}L_{L}R_{2}r_{o}s^{3} + C_{2}R_{2}r_{o}s + C_{L}L_{L}R_{2}s^{2} + C_{L}L_{L}R_{2}s^{2} + C_{L}L_{L}R_{2}s^{2} + C_{L}L_{L}R_{2}s^{2} + C_{L}L_{L}R_{2}s^{2} + C_{L}L_{L}R_{2}r_{o}s^{3} + C_{2}R_{2}r_{o}s + C_{2}R_{2}r_{o}s + C_{2}L_{L}R_{2}r_{o}s^{2} + C_{2}L_{L}R_{2$$

**10.160** INVALID-ORDER-160  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

$$H(s) = \frac{R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L L_L R_2 R_L r_o s^4 + C_1 C_2 R_2 R_L r_o s^2 + C_1 C_L L_L R_2 r_o s^3 + C_1 C_L R_2 r_o s^3$$

**10.161** INVALID-ORDER-161  $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1}{s \left( C_1 C_2 C_L R_2 r_o s^2 + C_1 C_2 R_2 s + C_1 C_2 r_o s + C_1 C_L r_o s + C_1 + C_2 C_L R_2 g_m r_o s + C_2 C_L R_2 s + C_2 C_L r_o s + C_L g_m r_o + C_L \right)}$$

10.162 INVALID-ORDER-162  $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_L \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L R_2 R_L r_o s^3 + C_1 C_2 R_2 R_L s^2 + C_1 C_2 R_L r_o s^2 + C_1 C_L R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 C_L R_2 R_L g_m r_o s^2 + C_2 C_L R_2 R_L s^2 + C_2 C_L R_2 R_L s^2 + C_2 R_2 g_m r_o s + C_2 R_2 g_m r_$$

**10.163** INVALID-ORDER-163  $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}R_{2}r_{o}s^{2} + C_{1}C_{2}C_{L}R_{L}r_{o}s^{2} + C_{1}C_{2}R_{2}s + C_{1}C_{2}r_{o}s + C_{1}C_{L}R_{L}s + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}R_{2}g_{m}r_{o}s + C_{2}C_{L}R_{2}s + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$$

**10.164** INVALID-ORDER-164  $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}L_{L}s^{2} + 1\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{L}R_{2}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{2} + C_{1}C_{2}R_{2}s + C_{1}C_{2}r_{o}s + C_{1}C_{L}L_{2}s^{2} + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}R_{2}g_{m}r_{o}s + C_{2}C_{L}R_{2}s + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$$

**10.165** INVALID-ORDER-165  $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_L s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_L R_2 r_o s^4 + C_1 C_2 L_L R_2 s^3 + C_1 C_2 L_L r_o s^3 + C_1 C_2 L_L r_o s^3 + C_1 L_L L_s^2 + C_1 r_o s + C_2 C_L L_L R_2 g_m r_o s^3 + C_2 C_L L_L R_2 s^3 + C_2 C_L L_L r_o s^3 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + C_L L_L g_m r_o s^2 + C_L L_L s^2 + g_m r_o + 1}$ 

**10.166** INVALID-ORDER-166  $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{L}R_{2}s^{3} + C_{1}C_{2}C_{L}R_{2}R_{L}s^{2} + C_{1}C_{2}C_{L}R_{2}r_{o}s^{2} + C_{1}C_{2}R_{2}s + C_{1}C_{2}r_{o}s + C_{1}C_{L}L_{L}s^{2} + C_{1}C_{L}R_{L}s + C_{1}C_{L}R_{2}s + C_{1}C_{L}R_{2}$ 

**10.167** INVALID-ORDER-167  $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{L_L R_L s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_L R_2 R_L r_o s^4 + C_1 C_2 L_L R_2 r_o s^3 + C_2 C_L R_2 r_o s^3 + C_2 C_L L_$ 

**10.168** INVALID-ORDER-168  $Z(s) = \left(\frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{\left(C_{L}L_{L}R_{2}s^{2} + L_{L}s + R_{L}\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}C_{L}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{2}s^{3} + C_{1}C_{2}L_{L}R_{2}s^{3} + C_{1}C_{2}R_{L}r_{o}s^{2} + C_{1}C_{2}R_{L}r_{o}s^{2} + C_{1}C_{L}L_{L}R_{2}s^{3} + C_{1}C_{L}L_{L}R_{2}s^{3} + C_{2}C_{L}L_{L}R_{2}s^{3} + C_{$ 

10.169 INVALID-ORDER-169  $Z(s) = \left(\frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_L R_2 r_o s^4 + C_1 C_2 C_L L_L R_2 r_o s^4 + C_1 C_2 R_2 R_L r_o s^3 + C_1 C_2 R_2 r_o s^2 + C_1 C_2 R_L r_o s^2 + C_1 C_L L_L R_2 r_o s^3 + C_1 C_L R_2 r_o$ 

10.170 INVALID-ORDER-170  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_2 R_L s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1}$$

**10.171** INVALID-ORDER-171  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{C_2L_2g_mr_os^2 + C_2L_2s^2 + C_2r_os + g_mr_o + 1}{s\left(C_1C_2C_LL_2r_os^3 + C_1C_2L_2s^2 + C_1C_2r_os + C_1C_Lr_os + C_1 + C_2C_LL_2g_mr_os^2 + C_2C_LL_2s^2 + C_2C_Lr_os + C_Lg_mr_o + C_L\right)}$$

**10.172** INVALID-ORDER-172  $Z(s) = \left(\frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 R_L r_o s^4 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_L r_o s^2 + C_1 R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 C_L L_2 R_L g_m r_o s^3 + C_2 C_L L_2 R_L r_o s^2 + C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + C_L R_L g_m r_o s + C_L R_L g_m r_o s + C_L R_L g_m r_o s^2 + C_2 R_L g_$ 

**10.173** INVALID-ORDER-173 
$$Z(s) = \left(\frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}R_{L}r_{o}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}r_{o}s+C_{1}C_{L}R_{L}s+C_{1}C_{L}r_{o}s+C_{1}+C_{2}C_{L}L_{2}g_{m}r_{o}s^{2}+C_{2}C_{L}L_{2}s^{2}+C_{2}C_{$$

**10.174** INVALID-ORDER-174  $Z(s) = \left(\frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}L_{L}s^{2} + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{L}s^{4} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{2}r_{o}s + C_{1}C_{L}L_{2}s^{2} + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}L_{2}g_{m}r_{o}s^{2} + C_{2}C_{L}L_{2}s^{2} + C_{2}C_{L}L_{2}s^{$$

10.175 INVALID-ORDER-175  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_2 L_L r_o s^5 + C_1 C_2 L_L r_o s^3 + C_1 C_2 L_L r_o s^3 + C_1 C_L L_L r_o s^3 + C_1 L_L s^2 + C_1 r_o s + C_2 C_L L_L L_L g_m r_o s^4 + C_2 C_L L_L L_L r_o s^3 + C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + C_L L_L g_m r_o s^2 + C_L L_L s^2 + g_m r_o + 1}$$

**10.176** INVALID-ORDER-176  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}L_{S}^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}L_{2}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{L}r_{o}s^{2} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{L}L_{2}s^{2} + C_{1}C_{L}R_{L}s + C_{1}C_{L}r_{o}s + C_{1}C_{L}L_{2}g_{m}r_{o}s^{2} + C_{2}C_{L}L_{2}s^{2} + C$$

10.177 INVALID-ORDER-177  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_L R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_L L_L R_L r_o s^5 + C_1 C_2 L_L L_L R_L r_o s^4 + C_1 C_2 L_L L_L R_L r_o s^3 + C_1 L_L L_L R_L r_o s^3 + C_1 L_L R_L r_o s^3 + C_2 L_L L_L R_L r_o s^3 + C_2 L_L L_L R_L r_o s^3 + C_2 L_$$

10.178 INVALID-ORDER-178  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}C_{L}L_{L}L_{L}r_{o}s^{5} + C_{1}C_{2}L_{L}L_{L}r_{o}s^{4} + C_{1}C_{2}L_{L}L_{s}^{4} + C_{1}C_{2}L_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{L}s^{3} + C_{1}C_{L}L_{L}R_{L}s^{3$$

10.179 INVALID-ORDER-179  $Z(s) = \left(\frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

$$H(s) = \frac{R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 L_L R_L s^5 + C_1 C_2 C_L L_2 L_L r_o s^4 + C_1 C_2 L_L R_L r_o s^4 + C_1 C_2 L_2 R_L r_o s^4 + C_1 C_2 L_L R_L r_o s^4 + C_1 C_2 R_L r_o s^4$$

**10.180** INVALID-ORDER-180  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_2 R_L s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_L r_o s^2 + C_1 C_2 R_L r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1}$$

**10.182** INVALID-ORDER-182  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$  $H(s) = \frac{R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 R_L r_o s^4 + C_1 C_2 L_2 R_L r_o s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_L r_o s^2 + C_1 C_2 R_L r_o s^3 + C_2 C_L L_2 R_L g_m r_o s^3 + C_2 C_L L_2 R_L g_m r_o s^2 + C_2 C_L R_2 R_L r_o$ **10.183** INVALID-ORDER-183  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{L}s^{3}+C_{1}C_{2}C_{L}R_{2}R_{2}s^{2}+C_{1}C_{2}L_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}r_{o}s+C_{1}C_{L}R_{2}s+C_{1}C_{L}R_{2}s+C_{2}C_{L}R_{2}g_{m}r_{o}s^{2}+C_{2}C_{L}R_{2}g_{m}r_{o}s+C_{2}C_{L}$ **10.184** INVALID-ORDER-184  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$  $H(s) = \frac{\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}R_{2}s+C_{1}C_{2}r_{o}s+C_{1}C_{L}L_{2}s^{2}+C_{1}C_{L}L_{2}s^{2}+C_{2}C_{L}L_{2}s^{2$ **10.185** INVALID-ORDER-185  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ **10.186** INVALID-ORDER-186  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}L_{2}s^{4} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{2} + C_{1}C_{2}C_{L}R_{2}r_{o}s^{2} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{2}R_{2}s + C_{1}C_{2}r_{o}s + C_{1}C_{L}L_{2}s^{2} + C_{1}C_{L}L_{2}s^{2}$ 10.187 INVALID-ORDER-187  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_s} + \frac{1}{L_s s}}\right)$  $H(s) = \frac{L_L \kappa_L s}{C_1 C_2 C_L L_2 L_L R_L r_o s^5 + C_1 C_2 C_L L_L R_2 R_L r_o s^4 + C_1 C_2 L_2 L_L R_L s^4 + C_1 C_2 L_2 L_L r_o s^4 + C_1 C_2 L_2 R_L r_o s^3 + C_1 C_2 L_L R_2 R_L s^3 + C_1 C_2 L_L R_L r_o s^3 + C_1 C_$ 10.188 INVALID-ORDER-188  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$  $(C_L L_L R_L s^2 + L_L s + R_L) (C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 s^2 + C$  $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_L s^5 + C_1 C_2 C_L L_L R_2 r_0 s^4 + C_1 C_2 C_L L_L R_2 r_0 s^4 + C_1 C_2 L_L R_2 r_$ 

 $H(s) = \frac{C_2L_2g_mr_os^2 + C_2L_2s^2 + C_2R_2g_mr_os + C_2R_2s + C_2r_os + g_mr_o + 1}{s\left(C_1C_2C_LL_2r_os^3 + C_1C_2C_LR_2r_os^2 + C_1C_2L_2s^2 + C_1C_2R_2s + C_1C_Lr_os + C_1C_Lr_os + C_1 + C_2C_LL_2g_mr_os^2 + C_2C_LR_2g_mr_os + C_2C_LR_2s + C_2C_$ 

**10.181** INVALID-ORDER-181  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

```
H(s) = \frac{1}{C_1C_2C_LL_2L_LR_2s^5 + C_1C_2C_LL_2L_Lr_os^5 + C_1C_2C_LL_2R_Lr_os^4 + C_1C_2C_LL_LR_2r_os^4 + C_1C_2C_LL_LR_2r_os^4 + C_1C_2C_LL_Rr_os^4 + C_1C_2C_LL_Rr_os^4 + C_1C_2C_LL_Rr_os^4 + C_1C_2C_LR_2r_os^3 + C_1C_2R_2r_os^3 + C_1C_2R_2r
10.190 INVALID-ORDER-190 Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)
                                                                                                                          H(s) = \frac{R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_2 R_2 r_o s^3 + C_1 C_2 L_2 R_2 r_o s^3 + C_1 L_2 R_L s^2 + C_1 L_2 r_o s^2 + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o s + L_2 s + R_2 g_m r_o s + R_2 r_o s^2 + C_2 R_2 r_o s^2 + 
10.191 INVALID-ORDER-191 Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)
                                                                 H(s) = \frac{C_2L_2R_2g_mr_os^2 + C_2L_2R_2s^2 + C_2L_2r_os^2 + L_2g_mr_os + L_2s + R_2g_mr_o + R_2 + r_o}{s\left(C_1C_2C_LL_2R_2r_os^3 + C_1C_2L_2R_2s^2 + C_1C_LL_2r_os^2 + C_1C_LL_2r_os^2 + C_1L_2s + C_1R_2 + C_1r_o + C_2C_LL_2R_2g_mr_os^2 + C_2C_LL_2R_2s^2 + C_2C_LL_2r_os^2 + C_LL_2g_mr_os + C_LL_2s + C_LR_2g_mr_o + C_LR_2 + C_LR_2g_mr_os^2 + C_LR_2g_mr_o
10.192 INVALID-ORDER-192 Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
H(s) = \frac{R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L L_2 R_2 R_L r_o s^4 + C_1 C_2 L_2 R_2 R_2 r_o s^3 + C_1 C_2 L_2 R_L r_o s^3 + C_1 C_L L_2 R_L r_o s^3 + C_1 C_L L_2 R_L r_o s^3 + C_1 C_L L_2 R_L r_o s^2 + C_1 L_2 R_L s^2 + C_1 L_2 r_o s^2 + C_1 R_2 r_o s^2 + C_1 R_2 r_o s^3 + C_2 C_L L_2 R_L r_o s^3 + C_2 C_L L_
10.193 INVALID-ORDER-193 Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}g_{m}r_{o}s+L_{2}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{2}R_{2}s^{2}+C_{1}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}L_{2}R_{2}r_{o}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L}L_{2}R_{2}s^{2}+C_{2}C_{L
10.194 INVALID-ORDER-194 Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}g_{m}r_{o}s+L_{2}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{2}L_{L}r_{o}s^{4}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{2}R_{2}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}r_{o}
10.195 INVALID-ORDER-195 Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 C_L L_2 L_L R_2 r_o s^5 + C_1 C_2 L_2 L_L R_2 s^4 + C_1 C_2 L_2 L_L r_o s^4 + C_1 C_L L_L L_R r_o s^3 + C_1 L_2 L_L s^3 + C_1 L_2 r_o s^2 + C_1 L_L r_o s^2 + C_1 L_L r_o s^2 + C_1 L_L r_o s^4 + C_2 C_L L_2 L_L R_2 r_o s^4 + C_2 C_L L_2 L_L r_
```

**10.189** INVALID-ORDER-189  $Z(s) = \left(\frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

**10.196** INVALID-ORDER-196  $Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{L}L_{S}^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + L_{2}g_{m}r_{o}s + L_{2}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{2}L_{L}R_{2}s^{4} + C_{1}C_{2}L_{L}L_{L}R_{2}s^{4} + C_{1}C_{2}L_{L}R_{2}R_{L}s^{3} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{2}L_{2}R_{2}r_{o}s^{3} + C_{1}C_{2}L_{2}R_{2}r_{o}s^{2} + C_{1}C_{L}L_{2}L_{2}s^{2} + C_{1}C_{L}L_{2}R_{2}s^{2} + C_{1}C_{L}L_{2}R_{2}s^{2}$ 

```
10.198 INVALID-ORDER-198 Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
H(s) = \frac{\left(C_{L}L_{L}R_{L}s^{2} + D_{L}L_{L}R_{L}s^{3} + C_{L}C_{L}L_{L}R_{L}s^{3} +
10.199 INVALID-ORDER-199 Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
H(s) = \frac{1}{C_1C_2C_LL_2L_LR_2R_Ls^5 + C_1C_2C_LL_2L_LR_2r_os^5 + C_1C_2C_LL_2L_LR_Lr_os^5 + C_1C_2L_2R_2R_Lr_os^4 + C_1C_2L_2R_2R_Ls^3 + C_1C_2L_2R_Lr_os^3 + C_1C_LL_2L_LR_Ls^4 + C_1C_LL_2L_LR_ss^4 + C_1C_LL_2R_Lr_os^4 + C_1C_LL_2R_Lr_os^3 + C_1C_LL_2R_Lr_os
10.200 INVALID-ORDER-200 Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, R_L\right)
                                                                                                                    10.201 INVALID-ORDER-201 Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
                                                                                           H(s) = \frac{C_2L_2R_2g_mr_os^2 + C_2L_2R_2s^2 + C_2L_2r_os^2 + C_2R_2r_os + R_2g_mr_o + R_2 + r_o}{s\left(C_1C_2C_LL_2R_2r_os^3 + C_1C_2L_2R_2s^2 + C_1C_2L_2r_os^2 + C_1C_LR_2r_os + C_1R_2 + C_1r_o + C_2C_LL_2R_2g_mr_os^2 + C_2C_LL_2R_2s^2 + C_2C_LL_2r_os^2 + C_2C_LR_2r_os + C_LR_2g_mr_o + C_LR_2 + C_Lr_o\right)}
10.202 INVALID-ORDER-202 Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
H(s) = \frac{R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L L_2 R_2 R_L r_o s^4 + C_1 C_2 L_2 R_L r_o s^3 + C_1 C_2 L_2 R_L r_o s^3 + C_1 C_2 L_2 R_L r_o s^2 + C_1 R_L r_o s^2 + C_1 R_L r_o s + C_1 R_L r_o s + C_2 C_L L_2 R_L r_o s^3 + C_2 C_L L_2 R_L r_o s^3 + C_2 C_L L_2 R_L r_o s^3 + C_2 C_L L_2 R_L r_o s^2 + C_2 R_L r_o s^3 + C_2 C_L R_2 R_L r_o s^3 + 
10.203 INVALID-ORDER-203 Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{L}r_{o}s^{3}+C_{1}C_{2}L_{L}R_{L}r_{o}s^{2}+C_{1}C_{2}L_{2}R_{2}s^{2}+C_{1}C_{2}L_{2}R_{2}s^{2}+C_{1}C_{2}L_{2}R_{2}s^{2}+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L
10.204 INVALID-ORDER-204 Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
```

 $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_2 R_L r_o s^5 + C_1 C_2 L_2 L_L R_2 R_L s^4 + C_1 C_2 L_2 L_L R_2 r_o s^4 + C_1 C_2 L_2 L_L R_L r_o s^4 + C_1 C_2 L_2 L_L R_L r_o s^4 + C_1 C_L R_L r_o s^4$ 

**10.197** INVALID-ORDER-197  $Z(s) = \left(\frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{2}L_{L}r_{o}s^{4}+C_{1}C_{2}C_{L}L_{2}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{2}R_{2}r_{o}s^{2}+C_{1}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{L}L_{L}R_{2}s^{2}+C_{1}C_{L}L_{L}r_{o}s^{2}+C_{1}C_{L}L_{2}R_{2}r_{o}s+C_{1}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{L}L_{2}R_{2}r_{o}s+C_{1}C_$ 

10.205 INVALID-ORDER-205  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 C_L L_2 L_L R_2 r_o s^5 + C_1 C_2 L_L L_R r_o s^3 + C_1 C_L L_L R_2 r_o s^3 + C_1 C_L L_L R_2 r_o s^3 + C_1 L_$ 

**10.206** INVALID-ORDER-206  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_L L_L s^2 + C_L R_L s + 1\right) \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 r_o s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{s \left(C_1 C_2 C_L L_2 L_L R_2 s^4 + C_1 C_2 L_L L_2 R_2 r_o s^3 + C_1 C_2 C_L L_2 R_2 r_o s^2 + C_1 C_2 R_2$ 

10.207 INVALID-ORDER-207  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

10.208 INVALID-ORDER-208  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{(\cup_{L} L_{L} R_{L} S^{-} + L_{L} S + R_{L}) (\cup_{2} L_{L} R_{L} R_{S}^{-} + L_{L} R_{L} R_{S$ 

10.209 INVALID-ORDER-209  $Z(s) = \left(\frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{2}L_{L}R_{2}R_{L}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{L}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{L}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{2}R_{L}R_{o}s^{4} + C_{1}C_{2}L_{2}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{2}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{2}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{2}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{2}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{2}R_{L}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{2}R_{L}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{L}r_{o}s^{3} + C_{1$ 

10.210 INVALID-ORDER-210  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{R_1 R_L \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 R_1 R_2 R_L s + C_1 R_1 R_2 r_o s + C_1 R_1 R_L r_o s + R_1 R_2 q_m r_o + R_1 R_2 + R_1 r_o + R_2 R_L + R_2 r_o + R_L r_o}$ 

**10.211** INVALID-ORDER-211  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

**10.212** INVALID-ORDER-212  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

**10.213** INVALID-ORDER-213  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_L R_1 R_2 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 r_o s^2 + C_1 R_1 r_o s + C_L L_L R_2 s^2 + C_L L_L r_o s^2 + C_L R_1 R_2 g_m r_o s + C_L R_1 r_o s + C_L R_1 r_o s + C_L R_2 r_o s + C_L R_1 r_o s + C_L R_2 r_$ 

**10.214** INVALID-ORDER-214  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{L_L R_1 R_L s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_L R_1 R_2 R_L r_o s^3 + C_1 L_L R_1 R_2 r_o s^2 + C_1 L_L R_1 R_2 r_o s^2 + C_1 L_L R_1 R_2 R_L r_o s^2 + C_L L_L R_1 R_2 R_L r_o s^2 + C_L L_L R_1 R_2 R_L r_o s^2 + C_L L_L R_1 R_2 r_o s^2 + L_L R_1$ 

**10.215** INVALID-ORDER-215  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{R_1 \left( R_2 g_m r_o + R_2 + r_o \right) \left( C_L L_L R_L s^2 + L_L s + R_L \right)}{C_1 C_L L_L R_1 R_2 r_o s^3 + C_1 C_L L_L R_1 R_2 r^3 + C_1 L_L R_1 R_2 r^2 + C_1 L_L R_1 R_2$ 

**10.216** INVALID-ORDER-216  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{R_1 R_L \left( C_L L_L s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_L R_1 R_2 r_o s^3 + C_1 C_L L_L R_1 R_2 r_o s^3 + C_1 C_L R_1 R_2 R_L r_o s^2 + C_1 R_1 R_2 r_o s + C_1 R_1 R_2 r_o s + C_1 R_1 R_2 r_o s + C_1 R_1 R_2 r_o s^2 + C_L L_L R_1 R_2 r_o s^2 + C_L R_1 R_$ 

**10.217** INVALID-ORDER-217  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L R_1 R_L r_o s^3 + C_1 C_2 R_1 r_o s^2 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_2 C_L R_1 r_o s^2 + C_2 C_L R_L r_o s^2 + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L R_L s + C_L r_o s + 1}$ 

**10.218** INVALID-ORDER-218  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_2 C_L L_L r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 r_o s + C_L L_L s^2 + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$ 

10.219 INVALID-ORDER-219  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

**10.220** INVALID-ORDER-220  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_2 r_o s + g_m r_o + 1 \right) \left( C_L L_L s^2 + C_L R_L s + 1 \right)}{C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 C_L R_1 R_L r_o s^3 + C_1 C_2 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_2 C_L R_1 r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_1 r_$ 

```
10.221 INVALID-ORDER-221 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)
```

 $H(s) = \frac{L_L R_1 R_L s \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_L R_1 R_L r_o s^3 + C_1 C_L L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_L r_o s^2 + C_1 R_1 R_L r_o s^3 + C_2 L_L R_1 R_L r_o s^3 + C_2 L_L R_1 R_L r_o s^2 + C_2 L_L R_1$ 

10.222 INVALID-ORDER-222  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{R_1 \left( C_2 r_o s + g_m r_o + 1 \right) \left( C_L L_L R_L s^2 + L_L s + R_L \right)}{C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 L_L R_1 r_o s^3 + C_1 C_L L_L R_1 R_L s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_L R_1 r_o s^3 + C_2 C_L R_1 r_o s^3 + C_2$ 

10.223 INVALID-ORDER-223  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{R_1 R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_L R_1 R_L r_o s^4 + C_1 C_2 R_1 R_L r_o s^2 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L L_L R_1 r_o s^3 + C_2 C_L R_$ 

**10.224** INVALID-ORDER-224  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L R_1 R_2 R_L r_o s^3 + C_1 C_2 R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 r_o s^2 + C_1 R_1 R_2 s + C_1 R_1 r_o s + C_2 C_L R_1 R_2 r_o s^2 + C_2 R_2 r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L R_2 r_o s + C_L R_1 r_o s + C_L R_2 r_$ 

**10.225** INVALID-ORDER-225  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 R_1 R_2 r_o s^2 + C_1 C_L L_L R_1 R_2 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_2 r_o s^2 + C_1 R_1 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L R_1 R_2 r_o s^2 + C_L R_1 R_2 r_o s^2 + C_L R_1 R_2 r_o s^2 + C_L R_1 R_2 r_o s^3 + C_L R_1 R_2$ 

**10.226** INVALID-ORDER-226  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_L R_1 s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_L R_1 R_2 r_o s^3 + C_1 L_L R_1 R_2 r_o s^3 + C_1 L_L R_1 R_2 r_o s^2 + C_1 L_L R_1 R_2 r_o s^3 + C_2 L_L R_$ 

10.227 INVALID-ORDER-227  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 L_L R_1 R_2 r_o s^3 + C_1 C_L L_L R_1 R_2 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L R_1 R_2 r_o s^2 + C_2 C_L R_2 R_L r_o s^2 + C_2 C_L R_2 R_$ 

10.228 INVALID-ORDER-228  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_r} + \frac{1}{L_r s}}\right)$ 

 $L_L R_1 R_L s \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)$  $H(s) = \frac{L_L R_1 R_2 R_L r_o s^3 + C_1 C_L L_L R_1 R_2 R_L r_o s^3 + C_1 L_L R_1 R_2 R_L r_o s^3 + C_1 L_L R_1 R_2 R_L r_o s^3 + C_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_L R_1 R_2 R_L r_o s$ 

```
10.231 INVALID-ORDER-231 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
                                                                                                H(s) = \frac{R_1 \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L R_1 R_2 r_o s^3 + C_1 C_2 R_1 R_2 s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_1 s + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L R_1 r_o s^2 + C_2 R_2 s + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}
10.232 INVALID-ORDER-232 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_1 R_1 s + 1}\right)
H(s) = \frac{R_1 R_L \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L R_1 R_2 R_L r_o s^3 + C_1 C_2 R_1 R_2 R_L r_o s^2 + C_1 C_2 R_1 R_L r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_1 C_L R_1 R_L r_o s^2 + C_2 C_L R_1 R_2 R_L r_o s^2 + C_2 C_L R_1 R_L r_o s^2 
10.233 INVALID-ORDER-233 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L R_1 R_2 r_o s^3 + C_1 C_2 C_L R_1 R_L r_o s^3 + C_1 C_2 R_1 R_2 s^2 + C_1 C_2 R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_2 C_L R_1 r_o s^
10.234 INVALID-ORDER-234 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_L R_1 R_2 s^4 + C_1 C_2 C_L L_L R_1 r_o s^3 + C_1 C_2 R_1 R_2 s^2 + C_1 C_2 R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_2 C_L L_L R_2 s^3 + C_2 C_L L_L R_2 s^3 + C_2 C_L L_L R_2 s^3 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 r_o s^2 + C_2 C_L 
10.235 INVALID-ORDER-235 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_L R_1 s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 L_L R_1 R_2 s^3 + C_1 C_2 L_L R_1 r_o s^3 + C_1 L_L R_1 r_o s^3 + C_1 L_L R_1 r_o s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L L_L R_
10.236 INVALID-ORDER-236 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 C_L L_R R_2 R_2 s^3 + C_1 C_2 C_L R_1 R_2 r_o s^3 + C_1 C_2 R_1 R_2 s^2 + C_1 C_2 R_1 r_o s^2 + C_1 C_L L_R R_2 s^3 + C_2 C_L L_L R_2 r_o s^3 + C_2 C_L R_1 R_2 r_o s^3 + C_1 C_2 R_1 R_2 r_o s^
10.237 INVALID-ORDER-237 Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_r} + \frac{1}{L_r s}}\right)
H(s) = \frac{1}{C_1C_2C_LL_LR_1R_2R_Lr_os^4 + C_1C_2L_LR_1R_2R_Ls^3 + C_1C_2L_LR_1R_2r_os^3 + C_1C_2L_LR_1R_Lr_os^3 + C_1C_LL_LR_1R_Lr_os^3 + C_1L_LR_1R_Ls^2 + C_1L_LR_1R_Ls^2 + C_1L_LR_1R_Lr_os^3 + C_2C_LL_LR_1R_2R_Ls^3 + C_2C_LL_LR_1R_2R_Ls^3 + C_2C_LL_LR_1R_Lr_os^3 + C_1C_LL_RR_1R_Lr_os^3 + C
```

 $H(s) = \frac{R_1 \left( C_L L_L R_L s^2 + L_L s + R_L \right) \left( C_2 R_2 r_o s + R_2 r_o s^2 + C_1 C_L L_L R_1 R_2 r_o s^3 + C_1 C_L R_1 R_2 r_o s^3 + C_$ 

 $H(s) = \frac{\frac{11111L\left( \bigcirc LLLS - + 1\right)\left( \bigcirc 2LLS - + 1\right)\left( -1\right)\left( -1\right)$ 

 $R_1 \left( C_L L_L R_L s^2 + L_L s + R_L \right) \left( C_2 R_2 r_o s + R_2 g_r \right)$ 

 $R_1 R_L \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 r_o s \right)$ 

**10.229** INVALID-ORDER-229  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

10.230 INVALID-ORDER-230  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_I s}}\right)$ 

10.238 INVALID-ORDER-238  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L R_1 R_2 R_L S^4 + C_1 C_2 C_L L_L R_1 R_2 r_o S^4 + C_1 C_2 C_L L_L R_1 R_L r_o S^4 + C_1 C_2 L_L R_1 R_2 r_o S^3 + C_1 C_2 R_1 R_2 r_o S^2 + C_1 C_2 R_1 R_2 r_o S^2 + C_1 C_2 R_1 R_L r_o S^3 + C_1 C_L L_L R_1 r_o S^3 + C_1 L_L R_1 r_o S^$ 

10.239 INVALID-ORDER-239  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_LR_1R_2R_Ls^4 + C_1C_2C_LL_LR_1R_2r_os^4 + C_1C_2C_LL_LR_1R_Lr_os^4 + C_1C_2C_LR_1R_2R_Lr_os^3 + C_1C_2R_1R_2R_Ls^2 + C_1C_2R_1R_2r_os^2 + C_1C_2R_1R_Lr_os^2 + C_1C_LL_LR_1R_Ls^3 + C_1C_LL_LR_1r_os^3 + C_1C_LR_1R_Lr_os^2 + C_1R_1R_Ls + C_1R_1r_os^2 + C_1C_LL_LR_1R_Ls^3 + C_1C_L$ 

**10.240** INVALID-ORDER-240  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

**10.241** INVALID-ORDER-241  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 R_1 r_o s^4 + C_1 C_2 L_2 R_1 s^3 + C_1 C_2 R_1 r_o s^2 + C_1 R_1 s + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 r_o s^3 + C_2 C_L R_1 r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$ 

**10.242** INVALID-ORDER-242  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{R_1 R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 R_1 R_L r_o s^4 + C_1 C_2 L_2 R_1 R_L s^3 + C_1 C_2 L_2 R_1 R_L r_o s^2 + C_1 L_2 R_1 R_L r_o s^2 + C_1 L_2 R_1 R_L r_o s^3 + C_2 C_L R_1 R_L r_o s^3 + C_2 C_L$ 

**10.243** INVALID-ORDER-243  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 R_1 R_L s^4 + C_1 C_2 C_L L_2 R_1 r_o s^3 + C_1 C_2 L_2 R_1 s^3 + C_1 C_2 R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 R_L r_o s^3 + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 R_1 r_o s^2 + C_2 L_$ 

**10.244** INVALID-ORDER-244  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 L_L R_1 s^5 + C_1 C_2 C_L L_2 R_1 r_o s^4 + C_1 C_2 L_2 R_1 s^3 + C_1 C_L R_1 r_o s^2 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 s^3 + C_2 C_L L_2 r_o s^3 + C_2$ 

10.245 INVALID-ORDER-245  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_L R_1 s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 L_L R_1 r_o s^3 + C_1 C_2 L_L R_1 r_o s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 L_L R_1 s^2 + C_1 R_1 r_o s^4 + C_2 C_L L_2 L_L R_1 s^4 + C_2 C_L L_2 L_L R_1 r_o s^3 + C_2 L_2 L_L R_1 r_o s^4 + C_2 C_L L_2 L_L R_1 r_o s^4 + C_2 C_L L_2 L_L R_1 r_o s^3 + C_2 L_2 L_L R_1 r_o s^3 + C_2 L_2 R_1 r_o s^4 + C_2 C_L R_1 r_o s^4 +$ 

**10.246** INVALID-ORDER-246  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)$  $H(s) = \frac{R_1 \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 L_L R_1 s^5 + C_1 C_2 C_L L_2 R_1 r_o s^4 + C_1 C_2 C_$ 

10.247 INVALID-ORDER-247  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_L r_o s^5 + C_1 C_2 L_2 L_L R_1 R_L s^4 + C_1 C_2 L_2 L_L R_1 r_o s^3 + C_1 C_2 L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_L r_o s^3 + C_1 L_L R_1 R_L r_o s^4 + C_2 C_L L_2 L_2 R_1 R_L$ 

10.248 INVALID-ORDER-248  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L R_1 R_L S_1 + C_1 C_2 C_L L_L R_1 R_L S_2 + C_1 C_2 C_L L_L R_1 R_L S_3 + C_1 C_2 L_L R_1 R_L S_$ 

10.249 INVALID-ORDER-249  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1R_Ls^5 + C_1C_2C_LL_2L_Rr_1r_os^5 + C_1C_2C_LL_2R_1R_Lr_os^4 + C_1C_2L_2R_1R_Ls^3 + C_1C_2L_2R_1R_Ls^3$ 

10.250 INVALID-ORDER-250  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{R_1 R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_2 R_1 R_L s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^2 + C_1 C_2 R_1 R_2 r_o s^2 + C_1 R_2 R_1 R_2 r_o s^2 + C_1 R_1 R_L s + C_1 R_1 r_o s + C_2 L_2 R_1 g_m r_o s^2 + C_2 L_2 R_1 s^2 + C_2 L_2 R_1 s^2 + C_2 L_2 R_1 s^2 + C_2 R_1 R_2 g_m r_o s + C_2 R_1 R_2 s + C_2 R_1 R_2 s + C_2 R_1 R_2 r_o s + C_2 R_2 r_o s + C_2$ 

10.251 INVALID-ORDER-251  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 R_1 r_o s^4 + C_1 C_2 C_L R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 s^3 + C_1 C_2 R_1 r_o s^2 + C_1 C_L R_1 r_o s^2 + C_1 C_L R_1 r_o s^3 + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L L_2 R_1 g_m r_o s^3 + C_2 C_L R_1 R_2 g_m r_o s^2 + C_2 C_L R_1 R_2 r_o s^2 + C_2 C_L R_1 r_o s^$ 

10.252 INVALID-ORDER-252  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{R_1 R_L \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 R_1 R_L r_o s^4 + C_1 C_2 L_L R_1 R_L r_o s^3 + C_1 C_2 L_2 R_1 R_L s^3 + C_1 C_2 L_2 R_1 R_L s^3 + C_1 C_2 L_2 R_1 R_L s^3 + C_1 C_2 R_1 R_L r_o s^2 + C_1 C_2 R_1 R_L r_o s^2 + C_1 C_2 R_1 R_L r_o s^3 + C_2 C_L L_2 R_1 R_L$ 

**10.253** INVALID-ORDER-253  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $R_{1}\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+C_{2}R_{2}s+$  $H(s) = \frac{R_1 \left( \bigcirc_L R_L R_1 R_1 - C_2 L_2 R_1 R_1 R_2 R_3 + C_1 C_2 L_2 R_1 R_2 R_3 + C_1 C_2 R_1$  **10.254** INVALID-ORDER-254  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $R_1\left(C_LL_Ls^2+1\right)\left(C_2L_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os+C_2R_2s+C_2r_os+C_2r_os^2\right)$  $H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + C_2 R_2 r_o s^2 + C_2 L_2 R_1 r_o s^4 + C_1 C_2 C_L L_2 R_1 r_o s^$ 

**10.255** INVALID-ORDER-255  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_L R_1 s \left(C_2 L_2 g_m r_o s^2 + C_1 C_2 C_L L_L R_1 r_o s^5 + C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 L_L R_1 r_o s^3 + C_1 C_2 L_L R_1 r_o s^4 + C_2 C_L R_1 r$ 

**10.256** INVALID-ORDER-256  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

10.257 INVALID-ORDER-257  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

10.258 INVALID-ORDER-258  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 L_L R_1 R_2 r_o s^4 + C_1 C_$ 

10.259 INVALID-ORDER-259  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 R_1 R_L r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 C_L R_1 R_2 r_o s^4 +$ 

**10.260** INVALID-ORDER-260  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{R_1 R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 L_2 R_1 R_L s^2 + C_1 L_2 R_1 r_o s^2 + C_1 R_1 R_2 r_o s^2 + C_1 R_1 R_2 r_o s + C_1 R_1 R_2 r_o s + C_1 R_1 R_2 r_o s^2 + C_2 L_2 R_1 R_2 s^2 + C_2 L_2 R_1 r_o s^2 + C_2 L_$ 

**10.261** INVALID-ORDER-261  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $R_1 \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)$  $H(s) = \frac{R_1 \left( C_2 L_2 R_2 g_m r_o s + C_2 L_2 R_2 s + C_2 L_2 r_o s + L_2 g_m r_o s + L_2 s + R_2 g_m r_o s + L_2 g_m r_o s + L_2$ 

- **10.262** INVALID-ORDER-262  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_2 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_2 R_1 R_2 R_L s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_L L_2 R_1 R_L r_o s^3 + C_1 C_L L_2 R_1 R_L r_o s^3 + C_1 C_L L_2 R_1 R_L r_o s^2 + C_1 L_2 R_1 R_L r_o s^2 + C_1 L_2 R_1 R_2 r_o s + C_1 R_1 R_2 r_$
- **10.263** INVALID-ORDER-263  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_1 C_L L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_L L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^4 + C_$
- **10.264** INVALID-ORDER-264  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
- $H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_1 C_2 C_L L_2 L_1 R_1 r_o s^3 + C_1 C_L L_2 R_1 R_2 s^$
- 10.265 INVALID-ORDER-265  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1R_2r_os^5 + C_1C_2L_2L_LR_1R_2s^4 + C_1C_2L_2L_LR_1r_os^4 + C_1C_LL_2L_LR_1r_os^4 + C_1C_LL_LR_1r_os^4 + C_1C_LL_LR_1r_os^4$
- **10.266** INVALID-ORDER-266  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 R_1 R_2 r_o s^4 + C_1 C_2 C_L L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_L L_2 R_1 R_2 r_o s^3 + C_1 C_$
- 10.267 INVALID-ORDER-267  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1R_2R_Lr_os^5 + C_1C_2L_2L_LR_1R_2R_Ls^4 + C_1C_2L_2L_LR_1R_2r_os^4 + C_1C_2L_2L_RR_1R_Lr_os^3 + C_1L_LL_RR_1R_Lr_os^4 + C_1C_LL_LR_1R_Lr_os^4 + C_1C_LL_LR_1R_Lr_os^4$
- 10.268 INVALID-ORDER-268  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1R_2R_Ls^5 + C_1C_2C_LL_2L_LR_1R_2r_os^5 + C_1C_2L_LL_RR_1R_2s^4 + C_1C_2L_2L_LR_1r_os^4 + C_1C_2L_2R_1R_2r_os^3 + C_1C_2L_2R_1R_Lr_os^3 + C_1C_LL_2L_LR_1R_Ls^4 + C_1C_LL_LR_1R_Ls^4 + C_1C_LL_LR_1R_2s^4 + C_1C$
- 10.269 INVALID-ORDER-269  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_L r_o s^5 + C_1 C_2 L_L R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_L r_o s^3 + C_1 C_L L_2 L_L R_1 R_L r_o s^4 + C_1 C_L L_2 L_L R_1 R_L r_o s^4 + C_1 C_L L_2 L_L R_1 R_L r_o s^4 + C_1 C_L L_2 R_1$

**10.270** INVALID-ORDER-270  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \right)$ 

 $H(s) = \frac{R_1 R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 R_1 R_2 R_L r_o s^2 + C_1 R_1 R_2 R_L s + C_1 R_1 R_2 r_o s + C_1 R_1 R_2 r_o s + C_2 L_2 R_1 R_2 g_m r_o s^2 + C_2 L_2 R_1 r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_2 r_o s^2 +$ 

10.271 INVALID-ORDER-271  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 s^3 + C_1 C_2 R_1 R_2 r_o s^2 + C_1 R_1 R_2 r_o s^2 + C_1 R_1 R_2 s + C_1 R_1 r_o s + C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_2 C_L L_2 R_1 r_o s^3 + C_2 C_$ 

10.272 INVALID-ORDER-272  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{R_1 R_L \left( C_2 L_2 R_2 g_m r_o s^2 + C_1 C_2 L_2 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_2 R_1 R_2 R_L s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 R_L r_o s^2 + C_1 R_1 R_2 r_o s + C_1 R_2 r_o s + C_1 R_1 R_2 r_o s + C_1 R_1 R_2 r_o s + C_1 R_1$ 

10.273 INVALID-ORDER-273  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L R_L s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 r_o s^2 + C_1 C_$ 

10.274 INVALID-ORDER-274  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{R_1 \left( C_L L_L s^2 + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_1 R_2 r_o s^2 + C_1 C_2 L_2 L_1 R_1 r_o s^3 + C_1 C_2 L_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_1 R_1 r_o s^3 + C_1 C_2 L_2 L_1 R_1 r_o s^3 + C_1 C_2 L_2 L_1 R_1 r_o s^3 + C_1 C_2 L_2 L_1 R_2 r_o s^4 + C_1 C_2 L_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_$ 

10.275 INVALID-ORDER-275  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_L R_1 s \left(C_2 L_2 R_2 g_m r_o s + C_1 C_2 L_2 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_2 L_L R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_L R_1 R_2 r_o s^3 + C_1 L_L R_1 R_2 r_o s^3 + C_1 L_L R_1 R_2 r_o s^3 + C_1 L_L R_1 R_2 r_o s^4 + C_2 C_L L_2 L_2 R_1 R_2 r_o s^4 + C_2 C_L L_2 L_2 R_1 R_2 r_o s^4 + C_2 C_L L_2 L_2 R_1 R_2 r_o s^4 + C_2 C_L L_2 L_2 R_1 R_2 r_o s^4 + C_2 C_L L_2 R_2 R_2 r_o s^4 + C_2 C_L L_2 R_2 R_2 r_o s^4 + C_2 C_L$ 

10.276 INVALID-ORDER-276  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1R_2s^5 + C_1C_2C_LL_2L_Rr_1r_os^5 + C_1C_2C_LL_2R_1R_2r_os^4 + C_1C_2C$ 

10.277 INVALID-ORDER-277  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 R_L r_o s^5 + C_1 C_2 L_2 L_L R_1 R_2 R_L s^4 + C_1 C_2 L_2 L_L R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L r_o s^4 + C_1 C_2 L_2 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_L R_1 R_2 R_L r_o s^3 + C_1 L_L R_1 R_2 R_L$ 

10.278 INVALID-ORDER-278  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_L L_R R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_L R_1 R_2 s^4 + C_1 C_2 L_2 L_L R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 R_$ 

10.279 INVALID-ORDER-279  $Z(s) = \left(\frac{R_1}{C_1 R_1 s + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_L r_o s^5 + C_1 C_2 C_L L_2 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_L R_1 R_2 R_L r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 R_1 R_2 r_o s^4 + C_1 C_2 R_1 R_2 r_o s^4 + C_1 C_2 R_1 R_2 r_o s^4$ 

**10.280** INVALID-ORDER-280  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 R_1 R_2 g_m r_o s + C_1 R_1 R_2 s + C_1 R_1 r_o s + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_L r_o s + R_2 g_m r_o + R_2 + r_o}$$

**10.281** INVALID-ORDER-281  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}R_{2}+C_{1}r_{o}+C_{L}R_{2}g_{m}r_{o}+C_{L}R_{2}+C_{L}r_{o}\right)}$$

**10.282** INVALID-ORDER-282  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}R_{L}s+1\right)\left(R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}R_{L}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{L}r_{o}s+C_{1}R_{2}+C_{1}r_{o}+C_{L}R_{2}g_{m}r_{o}+C_{L}R_{2}+C_{L}r_{o}\right)}$$

**10.283** INVALID-ORDER-283  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{L}L_{L}R_{2}s^{2}+C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}R_{2}+C_{1}r_{o}+C_{L}R_{2}q_{m}r_{o}+C_{L}R_{2}+C_{L}r_{o}}$$

**10.284** INVALID-ORDER-284  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L s \left(C_1 R_1 s + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_L R_1 R_2 g_m r_o s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L L_L R_2 r_o s^3 + C_1 L_L R_2 s^2 + C_1 L_L r_o s^2 + C_1 R_1 R_2 g_m r_o s + C_1 R_1 r_o s + C_1 R_1 r_o s + C_1 R_2 r_o s + C_L L_L R_2 g_m r_o s^2 + C_L L_L R_2 s^2 + C_L L_L R_2 r_o s^2 + C_L R_2 r_o s^2 +$$

**10.285** INVALID-ORDER-285  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+C_{L}R_{L}s+1\right)\left(R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{L}L_{L}R_{2}s^{2}+C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}r_{o}s$$

10.291 INVALID-ORDER-291  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{L}r_{o}s^{2}+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}R_{L}s+C_{1}C_{L}r_{o}s+C_{1}+C_{2}C_{L}r_{o}s+C_{L}g_{m}r_{o}+C_{L}\right)}$$

 $H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}r_{o}s+C_{1}C_{L}R_{1}q_{m}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}r_{o}s+C_{1}+C_{2}C_{L}r_{o}s+C_{L}q_{m}r_{o}+C_{L}\right)}$ 

10.292 INVALID-ORDER-292  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{L}r_{o}s^{3}+C_{1}C_{2}L_{L}R_{1}r_{o}s^{2}+C_{1}C_{L}L_{L}s^{2}+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}r_{o}s+C_{1}+C_{2}C_{L}r_{o}s+C_{L}g_{m}r_{o}+C_{L}\right)}$$

10.293 INVALID-ORDER-293  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L s \left(C_1 R_1 s + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 L_L r_o s^3 + C_1 C_2 L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L r_o s^3 + C_1 L_L s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 r_o s + C_2 C_L L_L r_o s^3 + C_2 r_o s + C_L L_L g_m r_o s^2 + C_L L_L s^2 + g_m r_o + 1}$$

**10.294** INVALID-ORDER-294  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)\left(C_{L}L_{L}s^{2}+C_{L}R_{L}s+1\right)}{s\left(C_{1}C_{2}C_{L}L_{L}r_{o}s^{3}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}r_{o}s+C_{1}C_{L}L_{L}s^{2}+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}R_{L}s+C_{1}C_{L}r_{o}s+C_{1}+C_{2}C_{L}r_{o}s+C_{L}g_{m}r_{o}+C_{L}\right)}$$

```
10.295 INVALID-ORDER-295 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)
H(s) = \frac{L_L R_L s \left(C_1 R_1 s + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 L_L R_1 r_o s^3 + C_1 C_2 L_L R_1 r_o s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 C_L L_L R_1 R_L g_m r_o s^3 + C_1 L_L R_1 g_m r_o s^3 + C_1 L_L 
10.296 INVALID-ORDER-296 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)\left(C_{L}L_{L}R_{L}s^{2}+L_{L}s+R_{L}\right)}{C_{1}C_{2}C_{L}L_{L}R_{1}r_{o}s^{4}+C_{1}C_{2}L_{L}r_{o}s^{3}+C_{1}C_{2}R_{L}r_{o}s^{2}+C_{1}C_{L}L_{L}R_{1}g_{m}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{1}s^{3}+C_{1}C_{L}L_{L}R_{1}s^{3}+C_{1}C_{L}L_{L}R_{1}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{L}L_{L}R_{2}s^{3}+C_{1}C_
10.297 INVALID-ORDER-297 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R_L(C_1R_1s+1)(C_LL_Ls^2+1)(C_2r_os+g_mr_o+1)
H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_L L_L s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 C_L L_L R_1 r_o s^3 + C_1 C_L L_L R_1 g_m r_o s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_1 s^3 + C_1 C_L L_L R_1 g_m r_o s^2 + C_1 C_L R_1 R_L g_m r_o 
10.298 INVALID-ORDER-298 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
                                                                                                                                                                                      H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}R_{1}R_{2}r_{o}s^{2}+C_{1}C_{2}R_{2}r_{o}s+C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}R_{2}+C_{1}r_{o}+C_{2}C_{L}R_{2}r_{o}s+C_{L}R_{2}g_{m}r_{o}+C_{L}R_{2}+C_{L}r_{o}\right)}
10.299 INVALID-ORDER-299 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L R_1 R_2 R_L r_o s^3 + C_1 C_2 R_1 R_2 r_o s^2 + C_1 C_L R_1 R_2 R_L g_m r_o s^2 + C_1 C_L R_1 R_2 R_L r_o s^2 + C_1 C_L R_1 R_2 R_L r_o s^2 + C_1 R_1 R_2 r_o s^2 + C_1 R_
10.300 INVALID-ORDER-300 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
                                                       H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}R_{1}R_{2}r_{o}s^{2}+C_{1}C_{2}R_{L}r_{o}s^{2}+C_{1}C_{2}R_{2}r_{o}s+C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C
10.301 INVALID-ORDER-301 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
                                                  H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{R}R_{2}r_{o}s+C_{1}C_{L}L_{L}R_{2}s^{2}+C_{1}C_{L}L_{L}r_{o}s^{2}+C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}R_{2}+C_{1}r_{o}+C_{2}C_{L}R_{2}r_{o}s+C_{L}R_{2}g_{m}r_{o}+C_{L}R_{2}+C_{L}r_{o}\right)}
10.302 INVALID-ORDER-302 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_L s \left(C_1 R_1 s + 1\right) \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 L_L R_2 r_o s^3 + C_1 C_L L_L R_1 R_2 g_m r_o s^3 + C_1 C_L L_L R_1 R_2 s^3 + C_1 C_L L_L R_1 r_o s^3 + C_1 C_L L_L R_2 r_o s^3 + C_1 R_2 r_o s^
10.303 INVALID-ORDER-303 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
```

 $H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+C_{L}R_{L}s+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}R_{1}R_{2}r_{o}s^{2}+C_{1}C_{L}L_{L}R_{2}s^{2}+C_{1}C_{L}L_{L}R_{2}s^{2}+C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r$ 

```
10.304 INVALID-ORDER-304 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)
H(s) = \frac{L_L R_L s \left(C_1 R_1 s + C_1 C_2 L_L R_1 R_2 R_L r_o s^4 + C_1 C_2 L_L R_1 R_2 r_o s^3 + C_1 C_2 L_L R_2 R_L r_o s^3 + C_1 C_L L_L R_1 R_2 R_L r_o s^3 + C_1 C_L L_L R_1 R_2 R_L r_o s^3 + C_1 C_L L_L R_1 R_2 R_L r_o s^3 + C_1 C_L L_L R_1 R_2 R_L r_o s^3 + C_1 C_L L_L R_1 R_2 R_L r_o s^3 + C_1 C_L L_L R_1 R_2 r_o s^3 + C_1 C_L
10.305 INVALID-ORDER-305 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (C_1R_1s+1)(C_LL_LR_Ls^2+L_Ls+R_L)(C_2R_2r_os+R_2g_mr_o+R_2+r_o)
H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}R_{2}s^{2}+L_{L}s+R_{L}\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{1}C_{2}C_{L}L_{L}R_{1}R_{2}r_{o}s^{4}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}
10.306 INVALID-ORDER-306 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
H(s) = \frac{RL \left(C_1 R_1 R_2 - s^4 + C_1 C_2 C_L L_L R_2 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^3 + C_1 C_2 R_1 R_2 r_o s^2 + C_1 C_2 R_2 R_L r_o s^2 + C_1 C_L L_L R_1 R_2 g_m r_o s^3 + C_1 C_L L_L R_1 R_2 s^3 + C_1 C_L L_L R_2 r_o s^3 + C_1 C_L R_2 r_
10.307 INVALID-ORDER-307 Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
                                                                         H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}R_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}R_{2}s+C_{1}C_{2}r_{o}s+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{2}g_{m}r_{o}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s
10.308 INVALID-ORDER-308 Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R_L(C_1R_1s+1)(C_2R_2g_mr_os+C_2R_2s+C_2r_os+g_mr_o+1)
H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^3 + C_1 C_2 C_L R_1 R_L r_o s^3 + C_1 C_2 R_1 R_2 g_m r_o s^2 + C_1 C_2 R_1 R_2 s^2 + C_
10.309 INVALID-ORDER-309 Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}R_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}R_{2}s+C_{1}C_{L}R_{2}g_{m}r_{o}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}
10.310 INVALID-ORDER-310 Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{2}C_{L}R_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}R_{2}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}R_{2}s+C_{1}C_{L}R_{2}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}r_{o}s+C_{1}+C_{2}C_{L}R_{2}g_{m}r_{o}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}s+C_{2}C_{L}R_{2}
10.311 INVALID-ORDER-311 Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_L s \left(C_1 R_1 s + 1\right) \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_L R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 L_L R_2 r_o s^4 + C_1 C_2 L_
10.312 INVALID-ORDER-312 Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
```

 $H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+C_{L}R_{L}s+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{L}R_{2}s^{3}+C_{1}C_{2}C_{L}R_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{2}R_{2}R_{2}s+C_{1}C_{$ 

 $(C_1R_1s+1)\left(C_LL_Ls^2+C_LR_Ls+1\right)\left(C_2R_2g_mr_os+C_2R_2s+C_2r_os+g_mr_o+1\right)$ 

```
10.313 INVALID-ORDER-313 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)
```

 $H(s) = \frac{1}{C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L s^4 + C_1 C_2 C_L L_L R_1 R_L r_o s^4 + C_1 C_2 L_L R_1 R_2 g_m r_o s^3 + C_1 C_2 L_L R_1 R_2 s^3 + C_1 C_2 L_L R_1 R_2 s^3 + C_1 C_2 L_L R_1 R_2 r_o s^3 + C_1 C_$ 

10.314 INVALID-ORDER-314 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

 $H(s) = \frac{(C_1R_1s + 1)\left(C_LL_LR_1s^2 + L_Ls + R_LS_1s^2 + L_Ls + R_L$ 

10.315 INVALID-ORDER-315 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_L R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 s^4 + C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 C_L L_L R_2 r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^4 + C_1 C_2 R_1 R_2 R_$ 

**10.316** INVALID-ORDER-316  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$ 

$$H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_2 R_1 g_m r_o s^3 + C_1 C_2 L_2 R_1 s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_1 r_o s^2 + C_1 C_2 R_L r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 r_o s + C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1}$$

10.317 INVALID-ORDER-317  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{1}g_{m}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}r_{o}s+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}L_{2}g_{m}r_{o}s^{2}+C_{2}C_{L}L_{2}s^{2}+C_{2}$$

10.318 INVALID-ORDER-318  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_2 R_1 R_L g_m r_o s^4 + C_1 C_2 C_L L_2 R_1 R_L r_o s^4 + C_1 C_2 C_L R_1 R_L r_o s^3 + C_1 C_2 L_2 R_1 g_m r_o s^3 + C_1 C_2 L_2 R_1 r_o s^3 + C_1 C_2 L_2 R_1 r_o s^3 + C_1 C_2 L_2 R_1 r_o s^3 + C_1 C_2 R_1 r_o s^$$

**10.319** INVALID-ORDER-319  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{L}R_{1}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}R_{2}s+C_{1}C_{L$$

**10.320** INVALID-ORDER-320  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{1}g_{m}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}r_{o}s+C_{1}C_{L}L_{2}s^{2}+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}r_{o}s+C_{1}+C_{2}C_{L}L_{2}g_{m}r_{o}s^{2}+C_{2}C_{L}L_{2}$$

10.321 INVALID-ORDER-321  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L s \left(C_1 R_1 s + 1\right) \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 L_L L_L R_1 s^5 + C_1 C_2 L_L L_L R_1 r_o s^4 + C_1 C_2 L_L L_R r_o s^4 + C_1 C_2 L_L R_1 r_o s^3 + C_1 C_$$

**10.322** INVALID-ORDER-322  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{1}g_{m}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}r_{o}s+C_{1}C_{L}L_{2}s^{2}+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}$$

**10.323** INVALID-ORDER-323  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 R_L r_o s^5 + C_1 C_2 L_L L_R R_1 R_L r_o s^4 + C_1 C_2 L_2 L_L R_1 g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 s^4 + C_1 C_2 L_2 L_L R_1 s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^3 + C_1 C_2 L_2 R_1 R_L g_m r_o s^3 + C_1 C_2 L_2 R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 L_L R_1 R_L g_m r_o s^4 + C_1 C_2 L_2 R_1 R_L g_m r_o s^4 + C_1 C_2 R_1 R_L g_m r_o s^4 + C_1 C_2$$

10.324 INVALID-ORDER-324  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{(C_1R_1s + 1)\left(C_LL_LR_1s^2 + L_Ls + R_L\right)}{C_1C_2C_LL_2L_LR_1g_mr_os^5 + C_1C_2C_LL_2L_LR_1s^5 + C_1C_2C_LL_2L_Lr_os^5 + C_1C_2C_LL_2L_LR_1r_os^4 + C_1C_2L_2L_Ls^4 + C_1C_2L_2R_1g_mr_os^3 + C_1C_2L_2R_1s^3 + C_1C_2R_1s^3 + C_1C_2R_1s^$$

10.325 INVALID-ORDER-325 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_T s}}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1g_mr_os^5 + C_1C_2C_LL_2L_LR_1s^5 + C_1C_2C_LL_2L_LR_2s^5 + C_1C_2C_LL_2L_Lr_os^5 + C_1C_2C_LL_2R_1R_Lg_mr_os^4 + C_1C_2C_LL_2R_1R_Ls^4 + C_1C_2C_LL_2R_1r_os^4 + C_1C$$

**10.326** INVALID-ORDER-326  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$ 

$$H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_2 R_1 g_m r_o s^3 + C_1 C_2 L_2 R_1 s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_1 R_2 g_m r_o s^2 + C_1 C_2 R_1 r_o s^2 + C_1 C_2 R_1 r_o s^2 + C_1 C_2 R_2 r_o s^2 + C_1 C_2 R_1 r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_1 s + C_1 R_1 s + C_1 R_1 s + C_1 R_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 g_m r_o s$$

10.327 INVALID-ORDER-327  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}R_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}R_{2}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}L_{2}s+C_{1}C_{2}r_{o}s+C_{1}C_{L}R_{1}g_{m}r_{o}s+C_{1}C_{L}R_{1}s+C_{1}C_{L}r_{o}s+C_{1}C_{L}L_{2}g_{m}r_{o}s^{2}+C_{2}C_{L}L_{2}r_{o}s+C_{1}C_{2}C_{L}R_{1}r_{o}s+C_{1}C_{$$

10.328 INVALID-ORDER-328 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 R_1 R_L g_m r_o s^4 + C_1 C_2 C_L L_2 R_1 R_L s^4 + C_1 C_2 C_L L_2 R_1 R_2 R_L g_m r_o s^3 + C_1 C_2 C_L R_1 R_2 R_$$

```
H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{1}g_{m}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}R_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_
10.330 INVALID-ORDER-330 Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{2}L_{2}s^{4}+C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{
10.331 INVALID-ORDER-331 Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1g_mr_os^5 + C_1C_2C_LL_2L_LR_1s^5 + C_1C_2C_LL_2L_Rr_os^5 + C_1C_2C_LL_Rr_1R_2s^4 + C_1C_2C_LL_Rr_1r_os^4 + C_1C_2C_LL_Rr_1r_os^4 + C_1C_2L_LR_1r_os^4 + C_1C_2L_LR_1r
10.332 INVALID-ORDER-332 Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_{2}
10.333 INVALID-ORDER-333 Z(s) = \left( R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right)
H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_L s^5 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o 
10.334 INVALID-ORDER-334 Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1g_mr_os^5 + C_1C_2C_LL_2L_LR_1s^5 + C_1C_2C_LL_2L_LR_2s^5 + C_1C_2C_LL_2L_LR_1g_mr_os^4 + C_1C_2C_LL_LR_1r_os^4 + C_1C_2C_LL_LR_1r_os^4 + C_1C_2C_LL_LR_2r_os^4 + C_1C_2C_LL_2r_os^4 
10.335 INVALID-ORDER-335 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 s^5 + C_1 C_2 C_L L_2 L_L R_1 s^5 + C_1 C_2 C_L L_2 L_L R_1 s^5 + C_1 C_2 C_L L_2 R_1 R_L g_m r_o s^4 + C_1 C_2 C_L L_2 R_1 R_L s^4 + C_1 C_2 C_L L_2 R_1 R_2 s^4 + C_1 C_
10.336 INVALID-ORDER-336 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)
H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_2 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_1 r_o s^3 + C_1 C_2 L_2 R_2 r_o s^3 + C_1 C_2 L_2 R_2 r_o s^3 + C_1 L_2 R_1 g_m r_o s^2 + C_1 L_2 R_1 s^2 + C_1 L_2 R_2 s^2 + C_1 L_2 R_2 r_o s + C_1 R_1 R_2 s + C_1 R_1 R_2 s + C_1 R_2 r_o s + C_1 R_2 R_2 s + C_1 R_2 r_o s + C_1
```

**10.329** INVALID-ORDER-329  $Z(s) = \left(R_1 + \frac{1}{C_1 s}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

```
10.337 INVALID-ORDER-337 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)
```

$$H(s) = \frac{(C_1R_1s + 1)\left(C_2L_2R_2g_mr_os^2 + C_2L_2R_2s^2 + C_2L_2r_os^2 + L_2g_mr_os + L_2s + R_2g_mr_o + R_2 + r_o\right)}{s\left(C_1C_2C_LL_2R_1R_2g_mr_os^3 + C_1C_2L_2R_1r_os^3 + C_1C_2L_2R_2s^2 + C_1C_LL_2R_1g_mr_os^2 + C_1C_LL_2R_1s^2 + C_1C_LL_2R_1s^2 + C_1C_LR_1R_2g_mr_os + C_1C_LR_1R_2s + C_1C_LR_1r_os + C_1C_LR_1r$$

10.338 INVALID-ORDER-338 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_2 R_1 R_2 R_L s^4 + C_1 C_2 C_L L_2 R_1 R_L r_o s^4 + C_1 C_2 L_2 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_1 R_2 s^3 + C_1 C_2 L_2 R_2 R_2 s^3 + C_1 C_2 L_2 R_2$$

**10.339** INVALID-ORDER-339 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}$$

**10.340** INVALID-ORDER-340 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}R$$

10.341 INVALID-ORDER-341 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 L_2 L_L R_2 r_o s^5 + C_1 C_2 L_2 L_L R_2 s^4 + C_1 C_2 L_2 L_L R_2 r_o s^4 + C_1 C_2 L_2 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_1 r_o s^3 + C_1 C_2 R_1 r_o s^3 +$$

10.342 INVALID-ORDER-342 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{(C_1R_1s+1)\left(C_LL_Ls^2 + C_LR_Ls + C_LR_Ls + C_LR_Ls^3 + C_LC_LL_LR_Ls^3 + C_LC_LL_LR_Ls^3$$

**10.343** INVALID-ORDER-343 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 R_L r_o s^5 + C_1 C_2 L_L L_L R_1 R_2 r_o s^5 + C_1 C_2 L_L L_L R_1 R_2 r_o s^4 + C_1 C_2 L_L R_1 R_2 r_$$

10.344 INVALID-ORDER-344 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 r_o s^5 + C_1 C_2 L_2 L_L R_2 r_o$$

```
10.345 INVALID-ORDER-345 Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_T s}}\right)
```

 $H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1R_2g_mr_os^5 + C_1C_2C_LL_2L_LR_1R_2s^5 + C_1C_2C_LL_2L_Rr_os^5 + C_1C_2C_LL_2L_Rr_os^5 + C_1C_2C_LL_2L_Rr_os^5 + C_1C_2C_LL_2L_Rr_os^5 + C_1C_2C_LL_2R_1R_2R_Lr_os^5 + C_1C_2C_LL_2R_1R$ 

**10.346** INVALID-ORDER-346 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L\right)$$

 $H(s) = \frac{R_L \left( C_1 R_1 s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 r_o s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_2 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_1 r_o s^3 + C_1 C_2 L_2 R_2 r_o s^3 + C_1 C_2 L_2 R_1 r_o s^3 + C_1 C_2 R_2 R_2 r_o s^3 + C_1 C_2 R_2 R_2 r_o s^3 + C_1 C_2 R_2 R_2 r_o s^3 + C_1 R_2 R_2 r_o s^3$ 

10.347 INVALID-ORDER-347 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

 $H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{2}R_{1}R_{2}g_{m}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{1}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{1}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}R_{2}r_{o}s+C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{$ 

**10.348** INVALID-ORDER-348 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_2 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_2 R_1 R_2 R_L s^4 + C_1 C_2 C_L L_2 R_1 R_L r_o s^4 + C_1 C_2 C_L L_2 R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^3 + C_1 C_2 L_2 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 L_2 R_$ 

10.349 INVALID-ORDER-349 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}r$ 

**10.350** INVALID-ORDER-350 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{\left(C_{1}R_{1}s+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}r_{o}s^{2}+C_{2}L_{2}R_$ 

10.351 INVALID-ORDER-351 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_2L_LR_1R_2g_mr_os^5 + C_1C_2C_LL_2L_RR_1r_os^5 + C_1C_2C_LL_2L_Rr_os^5 + C_1C_2C_LL_2L_Rr_os^5 + C_1C_2C_LL_2L_Rr_os^5 + C_1C_2L_2L_Rr_os^5 + C_1C_2L_2L_Rr_os^4 + C_1C_2L_2L_Rr_os^4 + C_1C_2L_2R_1R_2g_mr_os^3 + C_1C_2L_2R_1R_2s^3 + C_1C_2L_2R_1r_os^3 + C_1C_2R_1r_os^3 + C_1C_2R_1r_os$ 

**10.352** INVALID-ORDER-352 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{(c_1 R_1 c_2 + 1) (c_2 R_2 c_3 + c_1 C_2 C_L L_2 R_1 R_2 c_3 + c_1 C_2 C_L R_2 R_2 c_3 + c_1 C_2 C_L$ 

10.353 INVALID-ORDER-353 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 R_L r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L r_o s^4 + C_1 C_2 L_2 L_L R_1 R_2$$

10.354 INVALID-ORDER-354 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 r_o s^5 + C_1 C_2 C_L r_o$$

**10.355** INVALID-ORDER-355 
$$Z(s) = \left(R_1 + \frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^4 + C_1 C_2 C_L L_2 R_1 R_2 r_o s^4 + C_1 C_2 C_L L_2 R_$$

10.356 INVALID-ORDER-356 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}R_{2}r_{o}s + C_{1}R_{2} + C_{1}r_{o} + C_{L}R_{2}g_{m}r_{o} + C_{L}R_{2} + C_{L}r_{o}\right)}$$

**10.357** INVALID-ORDER-357 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 C_L L_2 R_L r_o s^2 + C_1 L_1 R_2 g_m r_o s^2 + C_1 L_1 r_o s^2 + C_1 L_1 r_o s^2 + C_1 R_2 R_L s + C_1 R_2 r_o s + C_1 R_2 R_L g_m r_o s + C_L R_2 R_L g_m r_o s$$

**10.358** INVALID-ORDER-358 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{L}R_{L}s + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}R_{2}R_{L}s + C_{1}C_{L}R_{2}r_{o}s + C_{1}C_{L}R_{1}r_{o}s + C_{1}R_{2} + C_{1}r_{o} + C_{L}R_{2}g_{m}r_{o} + C_{L}R_{2} + C_{L}r_{o}\right)}$$

**10.359** INVALID-ORDER-359 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{L}L_{L}s^{2} + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{L}L_{1}R_{2}g^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}L_{L}R_{2}s^{2} + C_{1}C_{L}L_{L}r_{o}s^{2} + C_{1}C_{L}L_{L}r_{o}s^{2} + C_{1}C_{L}R_{2}r_{o}s + C_{1}R_{2} + C_{1}r_{o} + C_{L}R_{2}g_{m}r_{o} + C_{L}R_{2} + C_{L}r_{o}\right)}$$

**10.360** INVALID-ORDER-360 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{L_L s \left(C_1 L_1 s^2 + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 L_L R_2 g_m r_o s^4 + C_1 C_L L_1 L_L R_2 s^4 + C_1 C_L L_L L_2 r_o s^3 + C_1 L_1 R_2 g_m r_o s^2 + C_1 L_1 r_o s^2 + C_1 L_L R_2 s^$$

**10.361** INVALID-ORDER-361  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ R_2, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}L_{L}R_{2}s^{2} + C_{1}C_{L}L_{L}r_{o}s^{2} + C_{1}C_{L}R_{2}R_{L}s + C_{1}C_{L}R_{2}r_{o}s + C_{1}C_{L}R_{2}r_{o}s + C_{1}R_{2} + C_{1}r_{o} + C_{L}R_{2}g_{m}r_{o} + C_{L}R_{2} + C_{L}r_{o}\right)}$$

10.362 INVALID-ORDER-362  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{L_L R_L s \left(C_1 L_1 s^2 + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 L_L R_2 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_2 R_L r_o s^4 + C_1 C_L L_L R_2 R_L r_o s^3 + C_1 L_1 L_L R_2 s^3 + C_1 L_1 L_L R_2 r_o s^3 + C_1 L_1 R_2 R_L g_m r_o s^2 + C_1 L_1 R_2 R_L g_m r_o s^$ 

**10.363** INVALID-ORDER-363  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)\left(C_{L}L_{L}R_{L}s^{2}+L_{L}s+R_{L}\right)}{C_{1}C_{L}L_{1}L_{L}R_{2}g_{m}r_{o}s^{4}+C_{1}C_{L}L_{L}L_{L}r_{o}s^{4}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}L_{1}R_{2}s^{2}+C_{1}L_{L}r_{o}s^{2}+C_{1}L_{L}r_{o}s^{2}+C_{1}L_{L}R_{2}r_{o}s+C_{1}R_{L}r_{o}s+C_{L}L_{L}R_{2}g_{m}r_{o}s^{2}+C_{L}L_{L}R_{2}r_{o}s+C_{L}L_{L}R_{2}r_{$ 

**10.364** INVALID-ORDER-364  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_L L_L s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 L_L R_2 g_m r_o s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_2 R_L s^3 + C_1 C_L L_L R_2 R_L s^3 + C_1 C_L L_L R_2 R_L r_o s^3 + C_1 C_L R_2 R_$ 

**10.365** INVALID-ORDER-365  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 r_o s^3 + C_1 C_2 R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_L s + C_1 r_o s + C_2 r_o s + g_m r_o + 1}$$

**10.366** INVALID-ORDER-366  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$$

**10.367** INVALID-ORDER-367  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 R_L r_o s^4 + C_1 C_2 L_1 r_o s^3 + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 R_L s + C_1 r_o s + C_2 C_L R_L r_o s^2 + C_2 r_o s + C_L R_L g_m r_o s + C_$$

**10.368** INVALID-ORDER-368  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{L}R_{L}s + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{L}r_{o}s^{2} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}R_{L}s + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$$

**10.369** INVALID-ORDER-369 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{L}L_{L}s^{2} + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{L}r_{o}s^{3} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}L_{L}s^{2} + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$$

**10.370** INVALID-ORDER-370  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L s \left(C_1 L_1 s^2 + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 L_1 r_o s^3 + C_1 C_2 L_L r_o s^3 + C_1 C_L L_L L_L g_m r_o s^4 + C_1 C_L L_L L_L s^4 + C_1 C_L L_L L_L r_o s^3 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 L_1 s^2 + C_1 L_L s^2 + C_1 L_L s^2 + C_1 L_L s^3 + C_1 L_L g_m r_o s^2 + C_L L_L r_o s^3 + C_2 r_o s + C_L r_o s^3 + C_2 r_o s^$$

10.371 INVALID-ORDER-371  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{L}r_{o}s^{2} + C_{1}C_{2}r_{o}s + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}R_{L}s + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$$

10.372 INVALID-ORDER-372  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{L_L R_L s \left(C_1 L_1 s^2 + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 L_L R_L r_o s^5 + C_1 C_2 L_1 L_L r_o s^4 + C_1 C_2 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^3 + C_1 L_1 L_L g_m r_o s^3 + C_1 L_1 R_L g_m r_o s^3 + C_1 R_L g_m r_o s^$$

10.373 INVALID-ORDER-373  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{5} + C_{1}C_{2}L_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}r_{o}s^{3} + C_{1}C_{L}L_{L}L_{L}g_{m}r_{o}s^{4} + C_{1}C_{L}L_{L}L_{L}s^{3} + C_{1}L_{L}s^{2} + C_{$$

10.374 INVALID-ORDER-374  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_T s}}\right)$ 

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_L L_L s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 L_L L_R L_r o s^4 + C_1 C_2 L_L r_o s^3 + C_1 C_L L_L L_L g_m r_o s^4 + C_1 C_L L_1 L_L g_m r_o s^4 + C_1 C_L L_1 R_L g_m r_o s^3 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L R_L s^3 + C_1 C_L L_L R_L r_o s^3 + C_1 C_L R_L$$

**10.375** INVALID-ORDER-375  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$ 

**10.376** INVALID-ORDER-376  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}C_{2}R_{2}r_{o}s + C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}R_{2}r_{o}s + C_{1}R_{2} + C_{1}r_{o} + C_{2}C_{L}R_{2}r_{o}s + C_{L}R_{2}g_{m}r_{o} + C_{L}R_{2} + C_{L}r_{o}\right)}$$

```
10.378 INVALID-ORDER-378 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
                                                            H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{2}R_{2}r_{o}s+C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}r_{o}s^{2}+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R
10.379 INVALID-ORDER-379 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
                                                       H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{L}R_{2}r_{o}s+C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s
10.380 INVALID-ORDER-380 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_L s \left(C_1 L_1 s^2 + 1\right) \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_L L_1 L_L R_2 q_m r_o s^4 + C_1 C_L L_1 L_L R_2 s^4 + C_1 C_L L_1 L_L R_2 r_o s^3 + C_1 L_1 R_2 q_m r_o s^2 + C_1 L_1 R_2 s^2 + C_1 L_1 r_o s^2 + C_1 L_
10.381 INVALID-ORDER-381 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}
10.382 INVALID-ORDER-382 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)
H(s) = \frac{L_L L_L R_2 R_L r_o s^5 + C_1 C_2 L_1 L_L R_2 R_L r_o s^4 + C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 L_1 L_L R_2 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_2 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_2 R_L r_o s^3 + C_1 L_1 L_L R_2 R_L r_o s^3 + C_1 L_1 L_L R_2 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_2 R_L r_o s^3 + C_1 L_1 L_L R_2 R_L r_o s^3 + C
10.383 INVALID-ORDER-383 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}L_{L}R_{2}s^{2}+L_{L}s+R_{L}\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{L}R_{2}r_{o}s
10.384 INVALID-ORDER-384 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 R_2 R_L r_o s^4 + C_1 C_2 L_L R_2 R_L r_o s^4 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 R_2 r_o s^4 + C_
```

 $H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L L_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 C_L L_1 R_2 R_L r_o s^2 + C_1 L_1 R_2 r_o s^2 + C_1 R_$ 

10.377 INVALID-ORDER-377  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(c) = \frac{H_c(C_c(L_b)^2 + 1)(C_c(L_{B_{B_{a}}C_{a}c} + C_{a}C_{a}c + S_{a}C_{a}c} + 1)}{C_c(C_c(L_b)^2 + 1)(C_c(L_{B_{a}}C_{a}c^2) + C_c(C_b(L_{B_{a}}C_{a}c^2) + C_c(L_{B_{a}}C_{a}c^2) + C_c(L_{$$

**10.385** INVALID-ORDER-385  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

10.392 INVALID-ORDER-392  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_I} + \frac{1}{L_I s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_{IL} L_1 L_L R_2 R_L q_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 R_L s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^4 + C_1 C_2 L_1 R_2 r_o s^4$ 

**10.393** INVALID-ORDER-393  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}L_{L}R_{L}s^{2}+L_{L}s+R_{L}s+L_{L}s+R_{$ 

10.394 INVALID-ORDER-394  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_2 r_o s^4 + C_1 C_$ 

**10.395** INVALID-ORDER-395  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$ 

 $H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 L_2 g_m r_o s^4 + C_1 C_2 L_1 L_2 s^4 + C_1 C_2 L_1 r_o s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_L r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_L s + C_1 r_o s + C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1}$ 

**10.396** INVALID-ORDER-396  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}L_{2}r_{o}s^{3} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}L_{2}g_{m}r_{o}s^{2} + C_{2}C_{L}L_{2}s^{2} + C_{2}C_{L}L_{2}s^{2} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}L_{2}g_{m}r_{o}s^{2} + C_{2}C_{L}L_{2}s^{2} + C_{2}C_{L}L_{2$ 

10.397 INVALID-ORDER-397  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 L_2 R_L g_m r_o s^5 + C_1 C_2 L_L L_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 g_m r_o s^4 + C_1 C_2 L_1 R_L r_o s^4 + C_1 C_2 L_1 L_2 g_m r_o s^4 + C_1 C_2 L_1 R_L r_o s^4 + C_1 C_2$ 

**10.398** INVALID-ORDER-398  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}s^{4} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{2} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}L_{2}s^{2} + C_{1}C_$ 

**10.399** INVALID-ORDER-399  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}L_{s}^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}s^{4}+C_{1}C_{2}C_{L}L_{1}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}r_{o}s+C_{1}C_{L}L_{1}s^{2}+C_{1}C_{L}L_{2}s^{2}+C_{$ 

**10.400** INVALID-ORDER-400  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_{L}s\left(C_{1}L_{1}s^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{1}C_{2}C_{L}L_{1}L_{2}L_{2}g_{m}r_{o}s^{6}+C_{1}C_{2}L_{L}L_{L}r_{o}s^{5}+C_{1}C_{2}L_{L}L_{L}r_{o}s^{5}+C_{1}C_{2}L_{L}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{2}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{2}L_{1}L_{2}s^{4}+C_{1}C_{$ 

**10.401** INVALID-ORDER-401  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{\left(C_{1}L_{1}s^{2} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}s^{4} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{2} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{L}L_{2}s^{2} + C_{1}$ 10.402 INVALID-ORDER-402  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$  $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_L s^6 + C_1 C_2 C_L L_1 L_L R_L r_o s^5 + C_1 C_2 L_1 L_2 L_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 L_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 L_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 L_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 L_2 R_L r_o s^5 + C_1 C_2 L_2 L_2 L_2 R_L r_o s^5 + C_1 C_2 L_2 L_2 L_2 R_L r_o s^5 + C_1 C_2 L_2 L_2$ 10.403 INVALID-ORDER-403  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$  $H(s) = \frac{(C_1L_1s^2 + 1)(C_LL_LR_Ls^2 + L_Ls + R_Ls + R_$ 10.404 INVALID-ORDER-404  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$  $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_Lg_mr_os^6 + C_1C_2C_LL_1L_2L_Ls^6 + C_1C_2C_LL_1L_2R_Lg_mr_os^5 + C_1C_2C_LL_1L_2R_Ls^5 + C_1C_2C_LL_1R_Lr_os^4 + C_1C_2C_LL_2L_Rs^5 + C_1C_2C_LL_2L_2L_2s^5 + C_1C_2C_LL_2L_2L_2s^5 + C_1C_2C_LL_2L_2L_2s^5 + C_1C_2C_LL_2L_2L_2s^5 + C_1C_2C_LL_2L_2s^5 + C_1C_2C_LL_2L_2s^5 + C_1C_2C_LL_2L_2s^5 + C_1C_2C_LL_2L_2s^5 + C_1C_2C_LL_2L_2s^5 + C_1C_2C_LL_2s^5 + C$ **10.405** INVALID-ORDER-405  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$  $H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 L_2 g_m r_o s^4 + C_1 C_2 L_1 R_2 g_m r_o s^3 + C_1 C_2 L_1 r_o s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_2 r_o s^2 + C_1 L_2 g_m r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_2 g_m r_o s^2 + C_2 L_2 g_m r_o s^2 + C_$ 

 $H(s) = \frac{1}{C_1 C_2 L_1 L_2 g_m r_o s^4 + C_1 C_2 L_1 L_2 s^4 + C_1 C_2 L_1 R_2 g_m r_o s^3 + C_1 C_2 L_1 r_o s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_L r_o s^2 + C_1 L_1 g_m r_$ 

**10.406** INVALID-ORDER-406  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{1}C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{1}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}R_{2}s+C_{1}C_{2}r_{o}s+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{2}s^{2}+C_{1}C$ 

**10.407** INVALID-ORDER-407  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L s^5 + C_1 C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L s^4 + C_1 C_$ 

**10.408** INVALID-ORDER-408  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}C_{L}L_{$ 

```
H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}L_{s}^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{L}
10.410 INVALID-ORDER-410 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 C_L L_1 L_2 r_o s^4 + C_1 C_2 L_1 L_2 g_m r_o s^4 + C_1 C_2 L_2 L_2 g_m r_o s^4 + C_1 C_2 L_2 L_2 g_m r_o s^4 + C_1 C_
10.411 INVALID-ORDER-411 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (C_1L_1s^2+1)(C_LL_Ls^2+C_LR_Ls+1)(C_2L_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2L_2s^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_mr_os^2+C_2R_2g_m
H(s) = \frac{(C_1L_1s + 1)(C_2L_2g_mr_os^4 + C_1C_2C_LL_1s + 1)(C_2L_2g_mr_os^4 + C_2L_2s + C_2R_2g_mr_os^4 + C_1C_2C_LL_1s + 1)(C_2L_2g_mr_os^4 + C_1C_2G_LL_1s 
10.412 INVALID-ORDER-412 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_T} + \frac{1}{L_T s}}\right)
H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_Lq_mr_os^6 + C_1C_2C_LL_1L_2L_LR_Ls^6 + C_1C_2C_LL_1L_LR_2R_Lq_mr_os^5 + C_1C_2C_LL_1L_LR_2R_Ls^5 + C_1C_2C_LL_1L_LR_Lr_os^5 + C_1C_2C_LL_2L_LR_Lr_os^5 + C_1C_2C_LL_2L_LR_2R_Lr_os^4 + C_1C_2L_1L_2L_Lq_mr_os^5 + C_1C_2L_1L_2L_1q_mr_os^5 + C_1C_2L_1L_1q_mr_os^5 + C_1C_2L_1L_1q_mr_os^5 + C_1C_2L_1q_mr_os^5 + C_1C_2L
10.413 INVALID-ORDER-413 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 s^5 + C_1 C_2 C_L L_2 R_2 R_2 s^5 + C_1 C_
10.414 INVALID-ORDER-414 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_
10.415 INVALID-ORDER-415 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)
H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_1 L_2 R_2 g_m r_o s^4 + C_1 C_2 L_1 L_2 r_o s^4 + C_1 C_2 L_2 R_2 r_o s^3 + C_1 L_2 L_2 r_o s^3 + C_1 L_1 L_2 g_m r_o s^3 + C_1 L_1 L_2 g_m r_o s^2 + C_1 L_1 r_o s^2 + C_1 L_2 r_o s^2 + C_1 L_2 r_o s^2 + C_1 R_2 r_o s 
10.416 INVALID-ORDER-416 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_1 s}\right)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \left( C_1 L_1 s^2 + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o \right) 
                                                   \frac{(C_1L_1C_3+L_1)(C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_mr_os^3+C_2L_2I_2S_m
```

**10.409** INVALID-ORDER-409  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$ 

- 10.417 INVALID-ORDER-417  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 L_L L_2 R_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_2 g_m r_o s^4 + C_1 C_2 L_2 R_$
- **10.418** INVALID-ORDER-418  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}R$
- 10.419 INVALID-ORDER-419  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
- $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+L_{2}R_{2}s^{2}+C_{2}L_{2}R_{2}s^$
- 10.420 INVALID-ORDER-420  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_2s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_2L_LR_2r_os^5 + C_1C_2L_1L_2R_2g_mr_os^4 + C_1C_2L_1L_2R_2s^4 + C_1C_2L_2L_LR_2s^4 + C_1C_2L_2L_2L_2R_2s^4 + C_1C_2L_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4$
- 10.421 INVALID-ORDER-421  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}L_{L}s^{2}+C_{L}R_{L}s+C_{L$
- 10.422 INVALID-ORDER-422  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2R_Lg_mr_os^6 + C_1C_2C_LL_1L_2L_LR_2R_Ls^6 + C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2L_1L_2L_LR_2g_mr_os^5 + C_1C_2L_1L_2L_LR_2s^5 + C_1C_2L_1L_2L_2s^5 + C_1C_2L_1L_2L_2s^5 + C_1C_2L_1L_2L_2s^5 + C_1C_2L_1L_2s^5 + C$
- 10.423 INVALID-ORDER-423  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_2s^6 + C_1C_2C_LL_2L_LR_2r_os^6 + C_1C_2C_LL_2L_LR_2r_os^5 + C_1C_2L_LL_2L_Rr_os^5 + C_1C_2L_1L_2R_2g_mr_os^4 + C_1C_2L_1L_2R_2s^4 + C_1C_2L_1L_2R_2s^4 + C_1C_2L_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2R_2R_2s^4 + C_1C_2R_2R_2s^2 + C_1C_2R_2R$
- 10.424 INVALID-ORDER-424  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 r_o s^5 + C_1 C_2 C_L L_2 R_2 r_o s^5 + C_1 C_2 C_L R_2 r_o s^5 + C_1 C_2$

```
10.425 INVALID-ORDER-425 Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L\right)
```

 $H(s) = \frac{R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 r_o s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_1 L_2 R_2 g_m r_o s^4 + C_1 C_2 L_1 L_2 r_o s^4 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_2 R_2 r_o s^3 + C_1 C_2 L_2 R_L r_o s^3 + C_1 C_2 L_2 R_L r_o s^3 + C_1 C_2 L_2 R_L r_o s^2 + C_1 L_1 R_2 s^2 +$ 

10.426 INVALID-ORDER-426 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

 $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}R_{2}s^{4}+C_{1}C_{2}C_{L}L_{1}L_{2}r_{o}s^{4}+C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{2}R_{2}r_{o}s^{2}+C_{1}C_{2}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{$ 

10.427 INVALID-ORDER-427 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4$ 

10.428 INVALID-ORDER-428 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}r_{o}$ 

**10.429** INVALID-ORDER-429 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{\left(C_{1}L_{1}s^{2}+1\right)\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{2}s^{2}+C_{2}L_{2}r_{o}s^{2}+C_{2}L_$ 

10.430 INVALID-ORDER-430 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 L_L L_L R_2 r_o s^5 + C_1 C_2 L_1 L_2 R_2 g_m r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 R_2 R_2 r_o s^4 + C_$ 

10.431 INVALID-ORDER-431 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{(C_1L_1s^2 + 1)\left(C_LL_1s^2 + C_LR_Ls + 1\right)\left(C_LL_1s^2 + C_LR_Ls$ 

10.432 INVALID-ORDER-432 
$$Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2R_Lg_mr_os^6 + C_1C_2C_LL_1L_2L_LR_2R_Ls^6 + C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2C_LL_1L_2L_LR_2R_Lr_os^5 + C_1C_2L_1L_2L_LR_2r_os^5 + C_1C_2L_1L_2L_Rr_os^5 + C_1C_2L_2L_2L_Rr_os^5 + C_1C_2L_2L_2L_Rr_os^5 + C_1C_2L_2L_2L_2Rr_os^5 + C_1C_2L_2L_2Rr_os^5 + C_1C_2L_2L_2Rr_os^5 + C_1C_2L_2L_2Rr_os^5 + C_1C_2L_2L_2Rr_os^5 + C_1C_2L_2L_2Rr_os^5 + C_1C_2L_2L_2Rr_os^5 + C_1C_2L_2Rr_os^5 + C_1C_2L_2Rr_os^5 + C_1C_2L_2Rr_os^5 + C_1C_2L_2Rr_os^5 + C_1C_2L_2Rr_os^5 + C_1C_2L_2Rr_os^5 + C_1C_2L_2Rr_os^$ 

10.433 INVALID-ORDER-433  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{2}g_{m}r_{o}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{2}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{2}R_{2}r_{o}s^{5} + C$ 

10.434 INVALID-ORDER-434  $Z(s) = \left(L_1 s + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_2s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_2R_2R_Lg_mr_os^5 + C_1C_2C_LL_1L_2R_Lr_os^5 + C_1C_2C_LL_1R_2R_Lr_os^5 + C_1C_2C_LL_1R_2R_Lr_os$ 

10.435 INVALID-ORDER-435  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}R_{2}s^{2} + C_{1}L_{1}r_{o}s^{2} + C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}r_{o}s^{2} + C_{L}R_{2}r_{o}s + R_{2} + r_{o}}$$

**10.436** INVALID-ORDER-436  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{L_1 R_L s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 R_2 R_L r_o s^3 + C_1 L_1 R_2 R_L s^2 + C_1 L_1 R_2 r_o s^2 + C_L L_1 R_2 R_L g_m r_o s^2 + C_L L_1 R_2 R_L s^2 + C_L L_1 R_L r_o s^2 +$$

**10.437** INVALID-ORDER-437  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{L}r_{o}s^{3}+C_{1}L_{1}R_{2}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}L_{1}R_{2}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}R_{2}r_{o}s+C_$$

**10.438** INVALID-ORDER-438  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \ R_2, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{1}C_{L}L_{1}L_{L}r_{o}s^{4}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}L_{1}R_{2}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}L_{1}R_{2}s^{2}+C_$$

**10.439** INVALID-ORDER-439  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_1 L_L s^2 \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 L_1 L_L R_2 s^3 + C_1 L_1 L_L R_2 r_o s^2 + C_L L_1 L_L R_2 q_m r_o s^3 + C_L L_1 L_L R_2 s^3 + C_L L_1 L_L R_2 r_o s^2 + L_1 R_2 q_m r_o s + L_1 R_2 s + L_1 r_o s + L_1 R_2 s + L_1 r_o s + L_1 R_2 s + L_1 r_o s + L_1 R_2 r_o s^2 + L_1 R_2 r_o s^2$$

**10.440** INVALID-ORDER-440  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{L}L_{1}L_{L}r_{o}s^{4} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s$$

**10.441** INVALID-ORDER-441  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{L_1 L_L R_L s^2 \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 L_L R_2 R_L r_o s^4 + C_1 L_1 L_L R_2 r_o s^3 + C_1 L_1 R_2 r_o s^3 + C_$ 

**10.442** INVALID-ORDER-442  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{L_{1}s\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)}{C_{1}C_{L}L_{1}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{2}r_{o}s^{4} + C_{1}L_{1}L_{L}R_{2}s^{3} + C_{1}L_{1}L_{L}R_{2}s^{3} + C_{1}L_{1}L_{L}R_{2}r_{o}s^{2} + C_{1}L_{1}R_{L}r_{o}s^{2} + C_{L}L_{1}L_{L}R_{2}s^{3} + C_{L}L_{1}L_{L}R_{2}s^{3} + C_{L}L_{L}R_{2}r_{o}s^{2} + C_{L}L_{L}R_{2}r_{o}s^$ 

10.443 INVALID-ORDER-443  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{L_1 R_L s \left(C_L L_L s^2 + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 R_2 R_L s^2 + C_1 L_1 R_2 r_o s^2 + C_1 L_1 R_L r_o s^2 + C_L L_1 L_L R_2 g_m r_o s^3 + C_L L_1 L_L R_2 s^3 + C_L L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 R_2 r_o s^4 +$ 

10.444 INVALID-ORDER-444  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty\right)$ 

$$H(s) = \frac{L_1 R_L s \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_2 L_1 r_o s^2 + C_2 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o}$$

10.445 INVALID-ORDER-445  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{1}L_{1}s^{2} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}r_{o}s + C_{L}L_{1}g_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} + C_{L}r_{o}s + 1}$$

**10.446** INVALID-ORDER-446  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

**10.447** INVALID-ORDER-447  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{1}C_{2}C_{L}L_{1}R_{L}r_{o}s^{4}+C_{1}C_{2}L_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{L}s^{3}+C_{1}C_{L}L_{1}r_{o}s^{3}+C_{1}L_{1}s^{2}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}R_{L}r_{o}s^{2}+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}s^{2}+C_{L}R_{L}s+C_{L}r_{o}s+1}$$

**10.448** INVALID-ORDER-448  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{5}+C_{1}C_{2}L_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}L_{s}^{4}+C_{1}C_{L}L_{1}r_{o}s^{3}+C_{1}L_{1}s^{2}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{L}r_{o}s^{3}+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}s^{2}$$

**10.449** INVALID-ORDER-449  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

**10.450** INVALID-ORDER-450  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{L_{1}s\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{5} + C_{1}C_{2}L_{L}r_{o}s^{3} + C_{1}C_{L}L_{1}L_{L}s^{4} + C_{1}C_{L}L_{1}R_{L}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{1}L_{L}r_{o}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{1}r_{o}s$ 10.451 INVALID-ORDER-451  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$  $H(s) = \frac{L_1 L_L R_L s^2 \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 L_L R_L r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 L_1 L_L R_L s^3 + C_1 L_1 L_L r_o s^3 + C_2 L_1 L_L R_L r_o s^4 + C_2 L_1 L_L r_o s^3 + C_2 L_1 R_L r_o s^2 + C_2 L_L R_L r_o s^3 + C_L L_1 L_L R_L g_m r_o s^3 + C_L L_1 L_L R_L g_m r_o s^3 + C_L L_1 L_L R_L g_m r_o s^3 + C_L L_1 L_L R_L r_o s^3 + C_L L_1 R_L r_o s^$ **10.452** INVALID-ORDER-452  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$  $H(s) = \frac{L_{1}s\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{L}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}r_{o}s^{4} + C_{1}L_{1}L_{L}s^{3} + C_{1}L_{1}L_{L}s^{3} + C_{1}L_{1}L_{L}s^{3} + C_{1}L_{1}L_{L}s^{3} + C_{1}L_{1}L_{L}r_{o}s^{4} + C_{2}C_{L}L_{L}L_{L}r_{o}s^{4} + C_{2}L_{L}r_{o}s^{2} + C_{2}L_{L}r_{o}s^{$ 10.453 INVALID-ORDER-453  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$  $H(s) = \frac{L_1 R_L s \left(C_L L_L s^2 + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 L_L R_L r_o s^5 + C_1 C_2 L_1 R_L r_o s^3 + C_1 C_L L_1 L_L R_L s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_L r_o s^3 + C_2 C_L L_1 L_L r_o s^4 + C_2 C_L L_1 R_L r_o s^3 + C_2 L_1 r_o s^3 + C_2$ **10.454** INVALID-ORDER-454  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$  $H(s) = \frac{L_1 R_L s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 L_1 R_2 R_L s^2 + C_1 L_1 R_2 r_o s^2 + C_2 L_1 R_2 r_o s^2 + C_2 L_1 R_2 r_o s^2 + C_2 R_2 R_L r_o s + L_1 R_2 g_m r_o s + L_1 R_2 s + L_1 r_o s + R_2 R_L + R_2 r_o + R_L r_o r_o s^2 + C_2 R_2 R_L r_o s^2 +$ **10.455** INVALID-ORDER-455  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$  $H(s) = \frac{L_{1}s\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{2}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}R_{2}s^{2} + C_{1}L_{1}r_{o}s^{2} + C_{2}L_{L}R_{2}r_{o}s^{3} + C_{2}R_{2}r_{o}s + C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}r_{o}s^{2} + C_{L}R_{2}r_{o}s + R_{2} + r_{o}}$ **10.456** INVALID-ORDER-456  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$  $H(s) = \frac{L_1 R_L s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 C_L L_1 R_2 R_L r_o s^3 + C_1 L_1 R_2 R_L s^2 + C_1 L_1 R_2 r_o s^2 + C_2 C_L L_1 R_2 R_L r_o s^3 + C_2 L_1 R_2 r_o s^2 + C_2 L_1 R_2 R_L r_o s^2 + C_L L_1 R_2 R_L r_o s^2 + C_L$ **10.457** INVALID-ORDER-457  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{2}+C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{L}L_{1}R_{2}s^{2}+C_{L}L_{1}r_{o}s^{2}+C_{L}L_{1}R_{2}s^{2}+C_{$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5}+C_{1}C_{2}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}L_{L}r_{o}s^{4}+C_{1}C_{L}L_{1}L_{2}r_{o}s^{3}+C_{1}L_{1}R_{2}s^{2}+C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}L_{2}R_{2}r_{o}s^{3}+C_{2}L_{2}R_{2}r_{o}s^{3}$ 

**10.458** INVALID-ORDER-458  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

```
H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{1}L_{L}R_{2}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{2}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{2}s^{3} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{L}R_{2}r_{o}s^{3} + C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{2}C_{L}L_{1}R_
10.461 INVALID-ORDER-461 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_I} + \frac{1}{L_I s}}\right)
H(s) = \frac{L_1L_LL_R_2R_Lr_os^4 + C_1L_LL_R_2R_Lr_os^4 + C_1L_LL_R_2R_Lr_os^4 + C_1L_LL_R_2R_Lr_os^4 + C_1L_LL_R_2R_Lr_os^4 + C_1L_LL_R_2R_Lr_os^4 + C_2L_LL_R_2R_Lr_os^4 + C_2L_LL_R_2
10.462 INVALID-ORDER-462 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           L_1 s \left( C_L L_L R_L s^2 + L_L s + R_L \right) \left( C_2 R_2 r_o s + R_L \right)
H(s) = \frac{L_{1}s \left( \bigcirc_{L}L_{L}L_{L}s + L_{L}s +
10.463 INVALID-ORDER-463 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
10.464 INVALID-ORDER-464 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)
                                                                                                                                      H(s) = \frac{L_1 R_L s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 R_2 R_L s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_2 L_1 R_2 q_m r_o s^2 + C_2 L_1 R_2 s^2 + C_2 L_1 r_o s^2 + C_2 R_2 R_L s + C_2 R_2 r_o s + C_2 R_L r_o s + L_1 q_m r_o s + L_1 s + R_L + r_o r_o s^2 + C_2 R_2 r_o s + 
10.465 INVALID-ORDER-465 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
                                                                                               H(s) = \frac{L_{1}s\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{2}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{1}L_{L}r_{o}s^{3} + C_{1}L_{L}r_{o}s^{3} + C_{1}L_{L}r_{o}s^{3} + C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3} + C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{1}r_{o}
10.466 INVALID-ORDER-466 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
H(s) = \frac{L_1 R_L s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_2 C_L L_1 R_2 R_L g_m r_o s^3 + C_2 C_L L_1 R_2 R_L r_o s^3 + C_2 C_L L_1 R_2 R_L r_o s^3 + C_2 C_L L_1 R_2 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            L_1R_Ls\left(C_2R_2g_mr_os + C_2R_2s + C_2r_os + g_mr_o + 1\right)
10.467 INVALID-ORDER-467 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{4}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{4}+C_{1}C_{2}L_{1}R_{2}s^{3}+C_{1}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{L}L_{1}R_{2}s^{3}+C_{2}C_{L}L_{1}R_{2}s^{3}+C_{2}C_{L}L_{1}R_{2}s^{3}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L}R_{2}r_{o}s^{2}+C_{2}C_{L
```

 $H(s) = \frac{L_1 L_L s^2 \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 L_L R_2 r_o s^4 + C_1 L_L L_L R_2 r_o s^4 + C_1 L_1 L_L R_2 s^3 + C_1 L_1 L_L R_2 r_o s^2 + C_2 L_L L_L R_2 r_o s^4 + C_2 L_1 R_2 r_o s^2 + C_2 L_L L_L R_2 r_o s^3 + C_L L_1 L_L R_2 s^3 + C_L L_1 L_L R_2 r_o s^3 + C_L L_1 L_$ 

**10.459** INVALID-ORDER-459  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

**10.460** INVALID-ORDER-460  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

```
10.468 INVALID-ORDER-468 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
```

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{5}+C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{4}+C_{1}C_{2}L_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}L_{s}s^{4}+C_{1}C_{L}L_{1}r_{o}s^{3}+C_{1}L_{1}s^{2}+C_{2}C_{L}L_{1}R_{2}s^{3}+C_{2}C_{L}$$

**10.469** INVALID-ORDER-469 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{L_1 L_1 s^2 \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 L_1 L_L R_2 s^4 + C_1 C_2 L_1 L_L r_o s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 L_L r_o s^4 + C_2 C_L L_1 L_L R_2 r_o s^3 + C_2 L_1 L_L R_2 r_o s^3 + C_2 L_1 R_2 r_o s^3 + C_$$

**10.470** INVALID-ORDER-470 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}s^{5} + C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L$$

10.471 INVALID-ORDER-471 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_LR_2R_Lr_os^5 + C_1C_2L_1L_LR_2R_Ls^4 + C_1C_2L_1L_LR_2r_os^4 + C_1C_2L_1L_LR_2r_os^4 + C_1C_2L_1L_LR_2r_os^4 + C_1L_1L_LR_2r_os^4 + C_1L_1L_1R_2r_os^4 + C_1L_1L_1R_2r_os$$

10.472 INVALID-ORDER-472 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}L_{L}R_{2}R_{L}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}L_{1}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}L_{1}L_{L}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{L}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{L}R_{2}s^{3} + C_{1}C_{2}L_{1}R_{L}r_{o}s^{3} + C_{1}C_{L}L_{L}L_{L}R_{L}s^{4} + C_{1}C_{L}L_{L}L_{L}R_{2}s^{4} + C_{1}L_{L}L_{L}R_{2}s^{4} + C_{1}C_{L}L_{L}L_{L}R_{2}s^{4} + C_{1}C_{L}L_{L}R_{2}s^{4} + C_{1}C_{L}L_{L}R_{2}s$$

10.473 INVALID-ORDER-473 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_LR_2R_Ls^5 + C_1C_2C_LL_1L_LR_2r_os^5 + C_1C_2C_LL_1L_LR_Lr_os^5 + C_1C_2C_LL_1R_2R_Ls^3 + C_1C_2L_1R_2r_os^3 + C_1C_2L_1R_Lr_os^3 + C_1C_LL_1L_LR_Ls^4 + C_1C_LL_1L_Lr_os^4 + C_1C_LL_1R_Lr_os^3 + C_1L_1R_Ls^2 + C_1L_1R_Ls^3 + C_1C_LL_1R_Lr_os^3 + C_1C_LL$$

**10.474** INVALID-ORDER-474 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$$

$$H(s) = \frac{L_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 L_2 R_L s^4 + C_1 C_2 L_1 L_2 r_o s^4 + C_1 C_2 L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_2 L_1 L_2 g_m r_o s^3 + C_2 L_1 L_2 s^3 + C_2 L_1 r_o s^2 + C_2 L_2 R_L s^2 + C_2 L_2 r_o s^2 + C_2 R_L r_o s + L_1 g_m r_o s + L_1 s + R_L + r_o r_o s^2 + C_2 R_L r_o s^$$

**10.475** INVALID-ORDER-475 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}C_{L}L_{1}L_{2}r_{o}s^{5} + C_{1}C_{2}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{1}L_{1}s^{2} + C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}L_{2}s^{4} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + C_{L}L_{1}g_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} + C_{L}r_{o}s + 1}$$

 $\begin{aligned} & \textbf{10.476} & \textbf{INVALID-ORDER-476} & Z(s) = \left(\frac{L_{c1}}{C_{c1}L_{c2}L_{c3}}, L_{2}S + \frac{1}{C_{2}s}, \infty, \infty, \infty, \infty, \frac{R_{c}}{C_{R_{c2}+1}}\right) \\ & & L_{1}R_{cs}\left(C_{2}L_{2}g_{m}r_{s}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{s}s + g_{m}r_{s} + 1}\right) \\ & & L_{1}R_{cs}\left(C_{2}L_{2}g_{m}r_{s}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{s}s + g_{m}r_{s} + 1}\right) \\ & & L_{1}R_{cs}\left(C_{2}L_{2}L_{1}L_{2}R_{cs}s^{2} + C_{2}L_{2}L_{2}L_{2}r_{s}s^{2} + C_{2}L_{2}L_{2}r_{s}s^{2} + C_{2}L_{2}L_{2}r_{s}s^{2} + C_{2}L_{2}L_{2}r_{s}s^{2} + C_{2}L_{2}L_{2}r_{s}s^{2} + C_{2}L_{2}L_{2}r_{s}s^{2} + C_{2}L_{2}R_{cs}s^{2} + C_{2}L_{2}R_{cs}s^{2$ 

10.481 INVALID-ORDER-481  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

**10.482** INVALID-ORDER-482  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}L_{L}L_{L}R_{L}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}r_{o}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{L}r_{o}s^{5} + C_{1}C_{2}L_{1}L_{2}L_{L}s^{5} + C_{1}C_{2}L_{1}L_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{L}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{L}s^{4} + C_{1}C_{L}L_{1}L_{L}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}r_{o}s^$ 

10.483 INVALID-ORDER-483  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 L_L L_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_L r_o s^4 + C_1 C_L L_1 L_L R_L r_o s^4 + C_1 C_L L_$ 

```
10.484 INVALID-ORDER-484 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)
H(s) = \frac{L_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 L_2 R_L s^4 + C_1 C_2 L_1 R_2 R_L s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_2 L_1 L_2 g_m r_o s^3 + C_2 L_1 R_2 g^3 + C_2 L_1 R_2 s^3 + C_2 L_1 R_2 s^2 + C_2 L_1 R_2 s^2 + C_2 L_2 R_L s^2 + C_2 L_2 R_L s^2 + C_2 R_2 R_L s + 
10.485 INVALID-ORDER-485 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
H(s) = \frac{L_{1}s\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}C_{L}L_{1}L_{2}r_{o}s^{5} + C_{1}C_{2}L_{L}L_{2}s^{4} + C_{1}C_{2}L_{1}L_{2}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{1}L_{L}r_{o}s^{3} + C_{1}L_{L}r_{o}s^{3} + C_{1}L_{L}r_{o}s^{3} + C_{2}L_{L}L_{2}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3} + C_{2}C_{L}L_{1}R_{2}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3}
10.486 INVALID-ORDER-486 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
H(s) = \frac{L_1 K_L s \left( C_2 L_2 g_m r_o s^2 + C_1 C_2 C_L L_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_L s^4 + C_1 C_2 L_1 L_2 r_o s^4 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_L r_o s^3 + C_1 C_L L_1 R_L r_o s^3 + C_1 L_1 R_L s^2 + C_1 L_1 r_o s^2 + C_2 C_L L_1 L_2 R_L g_m r_o s^4 + C_2 C_L L_1 L_2 R_L g_m r_o s^3 + C_1 C_2 L_1 R_2 R_L g_m r_o s^3 + C_1 C_2 L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_2 C_L 
10.487 INVALID-ORDER-487 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_
10.488 INVALID-ORDER-488 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}s+C_{2}R_{2}
```

**10.489** INVALID-ORDER-489  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_1 L_L s^2 \left(C_2 L_2 g_m r_o s^2 + L_1 L_2 L_L r_o s^6 + C_1 C_2 L_1 L_1 L_2 r_o s^5 + C_1 C_2 L_1 L_2 L_2 s^5 + C_1 C_2 L_1 L_2 L_2 s^5 + C_1 C_2 L_1 L_2 L_2 s^4 + C_1 C_2 L_1 L_2 L_2 r_o s^4 + C_1 C_2 L_1 L_2 r_o s^4 +$ 

**10.490** INVALID-ORDER-490  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 s \left( \bigcirc_L L_L \right)}{C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_L s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_2 R_2 s^4 + C_1 C_2 L_1 L_2 s^4 + C_1 C_2 L_1 L_$ 

**10.491** INVALID-ORDER-491  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_{I.} L_1 L_2 L_{I.} R_{I.} r_o s^6 + C_1 C_2 C_{I.} L_1 L_L R_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 L_L R_L s^5 + C_1 C_2 L_1 L_2 L_L r_o s^5 + C_1 C_2 L_1 L_2 R_L r_o s^4 + C_1 C_2 L_1 L_L R_2 r_o s^4 + C_1 C_2 L_1 L_L R_2 r_o s^4 + C_1 C_2 L_1 L_L R_L r_o$ 

```
10.492 INVALID-ORDER-492 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
```

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 L_1 L_L R_2 r_o s^5 + C_1 C_$$

10.493 INVALID-ORDER-493 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^6 + C_1 C_2 L_1 L_2 R_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_L r_o s^$$

**10.494** INVALID-ORDER-494 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{L_1 R_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s + L_2 s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_L r_o s^4 + C_1 L_1 L_2 r_o s^3 + C_1 L_1 R_2 r_o s^2 + C_1 L_1 R_2 r_o s^2 + C_1 L_1 R_2 r_o s^3 + C_2 L_1 L_2 R_2 g_m r_o s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_1 L_2 r_o s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_2 r_o s^2 + C_$$

**10.495** INVALID-ORDER-495 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + L_{2}g_{m}r_{o}s + L_{2}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}L_{2}R_{2}s^{4} + C_{1}C_{L}L_{1}L_{2}r_{o}s^{4} + C_{2}C_{L}L_{1}L_{2}R_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}r_{o}s^{4} + C_{2}C_{L}L_{2}r_{o}s^{4} + C_{2}C_{L}L_{2}r_{o}s^{4} + C_{2}C_{L$$

**10.496** INVALID-ORDER-496 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_2 R_L s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_L L_1 L_2 R_L r_o s^4 + C_1 C_L L_1 L_2 R_L r_o s^4 + C_1 C_L L_1 L_2 R_L r_o s^3 + C_1 L_1 L_2 R_L s^3 + C_1 L_1 R_2 R_L s^$$

10.497 INVALID-ORDER-497 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}\right)}{C_{1}C_{2}C_{L}L_{1}L_{2}R_{2}r_{o}s^{5}+C_{1}C_{2}C_{L}L_{1}L_{2}R_{c}r_{o}s^{5}+C_{1}C_{2}L_{1}L_{2}R_{c}s^{4}+C_{1}C_{L}L_{1}L_{2}R_{c}s^{4}+C_{1}C_{L}L_{1}L_{2}R_{c}s^{4}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{4}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}L_{1}R_{2}r_{o}s^{3}+C_{1}L_{1}R_{2}s^{2}+C_{1}L_{1}R_{2}s^{2}+C_{1}L_{1}R_{2}r_{o}s^{4}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{4}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}L_{1}L_{2}s^{2}+C_{1}L_{1}R_{2}s^{2$$

10.498 INVALID-ORDER-498 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{2}L_{L}L_{L}L_{c}S^{6}+C_{1}C_{2}L_{L}L_{c}L_{c}S^{6}+C_{1}C_{2}L_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_{L}L_{c}S^{4}+C_{1}C_{L}L_{c}L_{c}S^{4}+C_{1}C_$$

**10.499** INVALID-ORDER-499 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2L_1L_2L_LR_2s^5 + C_1C_2L_1L_2L_Lr_os^5 + C_1C_2L_1L_2L_Lr_os^5 + C_1C_LL_1L_LL_Rr_os^5 + C_1C_LL_1L_LL_Rr_os^5 + C_1C_LL_1L_LR_2r_os^4 + C_1L_1L_2L_Ls^4 + C_1L_1L_2L_Ls^4 + C_1L_1L_2L_Ls^4 + C_1L_1L_2L_Ls^3 + C_1L_1L_2L_Rr_os^5 + C_1L_2L_2L_Rr_os^5 + C_1L_2L_2L_Rr_os^5 + C_1L_2L_2L_2Rr_os^5 + C_1L_2L_2L_2Rr_os^5 + C_1L_2L_2L_2Rr_os^5 + C_1L_2L_2L_2Rr_os^5 + C_1L_2L_2Rr_os^5 +$$

**10.500** INVALID-ORDER-500  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_2R_2s^5 + C_1C_2C_LL_1L_2R_2s^5 + C_1C_2L_1L_2R_2s^6 + C_1C_2L_1L_2R_2s^6$ 

10.501 INVALID-ORDER-501  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_I} + \frac{1}{L_I s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2R_Lr_os^6 + C_1C_2L_1L_2L_LR_2r_os^5 + C_1C_2L_1L_2L_Rr_os^5 + C_1C_2L_1L_2L_Rr_os$ 

10.502 INVALID-ORDER-502  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2R_Ls^6 + C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2L_1L_2L_LR_2s^5 + C_1C_2L_1L_2L_2L_2s^5 + C_1C_2L_1L_2L_2s^5 + C_1C_2L_1L_2L_2s^5 + C_1C_2L_1L_2L_2s^5 + C_1C_2L_1L_2s^5 + C$ 

10.503 INVALID-ORDER-503  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_L r_o$ 

**10.504** INVALID-ORDER-504  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{L_1 R_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_L r_o s^4 + C_1 C_2 L_1 R_2 R_L s^2 + C_1 L_1 R_2 r_o s^2 + C_2 L_1 L_2 R_2 g_m r_o s^3 + C_2 L_1 L_2 R_2 s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_1 R_2 r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_$ 

**10.505** INVALID-ORDER-505  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{2}L_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}L_{2}R_{2}s^{4} + C_{1}C_{L}L_{1}L_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}R_{2}s^{2} + C_{1}L_{1}R_{2}s^{2} + C_{2}L_{1}L_{2}R_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}R_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}R_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}R_{2}s^{4} + C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}R_{2}$ 

**10.506** INVALID-ORDER-506  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{L_1 R_L s \left(C_2 L_2 R_2 g_m r_o s + C_1 C_2 L_1 L_2 R_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_2 R_L s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_L r_o s^3 + C_1 L_1 R_2 R_L r_o s^3 + C_1 L_1 R_2 R_L s^2 + C_1 L_1 R_2 R_L r_o s^3 + C_1 L_1 R_2 R_L r_o s^4 + C_2 C_L L_1 L_2 R_2 R_L r_o s^4 + C_2 C_L L_1 L_2 R_2 R_L r_o s^4 + C_2 C_L L_1 L_2 R_L r_o s^4$ 

**10.507** INVALID-ORDER-507  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}R_{L}s+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}R_{c}s^{2}+C_{1}L_{2}R_{c}s^{2}+C_{1}L_{2}R_{c}s^{2}+C_{1}L_{2}R_{c}s^{2}+C_{1}L_{2}R_{c}s^{2}+C_{1}L_{2}R_{c}s^{2}+C_{1}L_{1}R_{c}s^{2}+C_{1}$ 

**10.508** INVALID-ORDER-508  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_{1}s\left(C_{L}L_{L}s^{2}+1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}R_{2}g_{m}r_{o}s^{2}+C_{2}R_{2}g_{m}$ 

**10.509** INVALID-ORDER-509  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_1 L_L s^2 \left(C_2 L_2 R_2 g_m r_{os} + C_1 C_2 L_1 L_2 L_L R_2 s^5 + C_1 C_2 L_1 L_2 L_L R_2 s^5 + C_1 C_2 L_1 L_2 L_L R_2 r_{os} + C_1 C_2 L_1 L_2 L_2 R_$ 

10.510 INVALID-ORDER-510  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_$ 

10.511 INVALID-ORDER-511  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_I} + \frac{1}{L_I s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2R_Lr_os^6 + C_1C_2L_1L_2L_LR_2r_os^5 + C_1C_2L_1L_2L_LR_2r_os^5 + C_1C_2L_1L_2L_LR_2r_os^5 + C_1C_2L_1L_2R_2R_Lr_os^4 + C_1C_LL_1L_LR_2R_Lr_os^4 + C_1C_LL_1L_LR_2R_Lr_os^4 + C_1L_1L_LR_2R_Lr_os^4 + C_1L_1L_1R_2R_Lr_os^4 + C_1L_1R_2R_Lr_os^4 + C_1L_1R_2R_Lr$ 

10.512 INVALID-ORDER-512  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_L R_2 r_o s^5 + C_1 C_2 L_1 L_2 R_2 r_o s^5 + C_1 C_$ 

10.513 INVALID-ORDER-513  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2R_Ls^6 + C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2C_LL_1L_2L_LR_Lr_os^6 + C_1C_2C_LL_1L_2R_Lr_os^5 + C_1C_2C_LL_1L_2R_Lr_os^5 + C_1C_2L_1L_2R_Lr_os^5 + C_1C_2L_1L_2R_Lr_os^5 + C_1C_2L_1L_2R_Lr_os^6 + C_1C_2L_1L_2R_Lr_os^6 + C_1C_2L_1L_2R_Lr_os^5 + C_1C_2L_1L_2R_Lr_os^5 + C_1C_2L_1L_2R_Lr_os^6 + C_1C_2L_2R_Lr_os^6 + C_1C_2L_2R_Lr_os^6$ 

**10.514** INVALID-ORDER-514  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}R_{1}R_{2}g_{m}r_{o}s + C_{1}C_{L}R_{1}r_{o}s + C_{1}C_{L}R_{2}r_{o}s + C_{1}C_{L}R_{2}r_{o}s + C_{1}R_{2} + C_{1}r_{o} + C_{L}R_{2}g_{m}r_{o} + C_{L}R_{2} + C_{L}r_{o}\right)}$ 

**10.515** INVALID-ORDER-515  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_2 R_L g_m r_o s^2 + C_1 C_L R_1 R_2 R_L g_m r_o s^2 + C_1 C_L R_1 R_2 R_L g_m r_o s^2 + C_1 L_1 R_2 g_m r_o s^2 + C_1 R_1 R_$ 

10.516 NVALID-ORDER-518 
$$Z(s) = (L_1s + R_1 + \frac{1}{C_1}, R_2, \infty, \infty, \infty, R_2 + \frac{1}{C_2})$$

$$|R(s) = \frac{1}{2} (C_1R_1s + 1)(C_1R_2s^2 + C_1C_2R_1s^2 + C_1R_1s^2 + C_1C_2R_1s^2 + C_1R_1s^2 + C_1R_$$

 $H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{1}r_{o}s^{2} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}R_{1}g_{m}r_{o}s + C_{1}C_{L}R_{1}s + C_{1}C_{L}r_{o}s + C_{1} + C_{2}C_{L}r_{o}s + C_{L}g_{m}r_{o} + C_{L}\right)}$ 10.525 INVALID-ORDER-525  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$  $H(s) = \frac{R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 R_L r_o s^4 + C_1 C_2 C_L R_1 R_L r_o s^3 + C_1 C_2 R_1 r_o s^2 + C_1 C_2 R_1 r_o s^2 + C_1 C_L R_1 R_L g_m r_o s^3 + C_1 C_L R_1 R_L g_m r_o s^3 + C_1 C_L R_1 R_L g_m r_o s^2 + C_1 L_1 g_m$ **10.526** INVALID-ORDER-526  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{1}L_{1}s^{2}+C_{1}R_{1}s+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}r_{o}s^{3}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}r_{o}s+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}s^{2}+C_{1}C_{L}R_{1}s+C_$ **10.527** INVALID-ORDER-527  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$  $H(s) = \frac{\left(C_{L}L_{L}s^{2} + 1\right)\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{1}r_{o}s^{2} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}R_{1}g_{m}r_{o}s + C_{1}C_{L}R_{1}s + C_$ 10.528 INVALID-ORDER-528  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$  $H(s) = \frac{L_L s \left(C_1 L_1 s^2 + C_1 R_1 s + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_L L_L r_o s^5 + C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 L_L r_o s^3 + C_1 C_2 L_L r_o s^3 + C_1 C_L L_L L_L g_m r_o s^4 + C_1 C_L L_L L_L g_m r_o s^4 + C_1 C_L L_L L_L r_o s^3 + C_1 C_L r_o s^3 + C_1 C_L$ 10.529 INVALID-ORDER-529  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{1}r_{o}s^{2} + C_{1}C_{2}C_{L}R_{L}r_{o}s^{2} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}R_{1}s + C_{1}C_{L}R_{1}s$ **10.530** INVALID-ORDER-530  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$  $H(s) = \frac{L_L K_L s \left( C_1 L_1 S^2 + C_1 C_2 C_L L_1 L_1 R_1 r_o s^3 + C_1 C_2 L_1 L_1 R_1 r_o s^3 + C_1 C_2 L_1 R_1 r_o$ 10.531 INVALID-ORDER-531  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$  $(C_1L_1s^2 + C_1R_1s + 1)(C_2r_os + g_mr_o + 1)(C_LL_LR_Ls^2 + L_Ls + R_L)$  $H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}R_{L}s^{2} + L_{L}s + R_{L}\right)}{C_{1}C_{2}C_{L}L_{L}L_{1}r_{o}s^{5} + C_{1}C_{2}L_{L}L_{1}r_{o}s^{4} + C_{1}C_{L}L_{L}L_{2}r_{o}s^{3} + C_{1}C_{L}L_{L}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{L}R_{1}s^{3} + C_{1}C_{L}L_{L}R_{1}s^{3} + C_{1}C_{L}L_{L}R_{1}s^{3} + C_{1}C_{L}L_{L}R_{2}s^{3} + C_{1}C_{L}L_{L}R_{2}s^$ 

**10.524** INVALID-ORDER-524  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

```
H(s) = \frac{R_L \left( C_L L_L s^2 + 1 \right) \left( C_L 
10.533 INVALID-ORDER-533 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)
                                                                                                10.534 INVALID-ORDER-534 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
 H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}C_{2}L_{1}R_{2}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}R_{1}R_{2}s + C_{1}C_{L}R_{1}r_{o}s + C_{1}C_{L}R_{1}r_{o}s + C_{1}C_{L}R_{2}r_{o}s 
10.535 INVALID-ORDER-535 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o +
H(s) = \frac{RL\left(C_{1}L_{1}s + C_{1}L_{1}s + C
10.536 INVALID-ORDER-536 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{1}L_{1}s^{2}+C_{1}R_{1}s+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{2}C_{L}R_{1}R_{2}r_{o}s^{2}+C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_{2}r_{o}s+C_{1}C_{L}R_
10.537 INVALID-ORDER-537 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}L_{s}^{2}+1\right)\left(C_{1}L_{1}s^{2}+C_{1}R_{1}s+1\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{2}L_{L}R_{2}r_{o}s^{2}+C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}L_{1}R_{2}s^{2}+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{L}R_{1}R_{2}s+C_{1}C_{
10.538 INVALID-ORDER-538 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_L s \left(C_1 L_1 s^2 + C_1 R_1 s + 1\right) \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 g_m r_o + R_3 r_o s^2 + C_1 C_2 L_L R_1 R_2 r_o s^3 + C_1 C_2 L_L R_1 R_2 r_o s^3 + C_1 C_2 L_L R_2 r_o s^3 + C_1 C
10.539 INVALID-ORDER-539 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2} + C_{1}C_{L}L_{1}R_{2}s^{2
```

10.532 INVALID-ORDER-532  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

```
10.540 INVALID-ORDER-540 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)
```

$$H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}R_{L}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{L}R_{1}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{2}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{1}R_{2}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{1}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{L}L_{L}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{L}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{L}R_{2}R_{L}r_$$

**10.541** INVALID-ORDER-541 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$H(s) = \frac{(C_1L_1s^2 + C_2C_2L_1L_1R_2r_os^5 + C_1C_2C_2L_1R_1R_2r_os^4 + C_1C_2L_1R_2r_os^3 + C_1C_2L_1R_2r_os^3 + C_1C_2R_1R_2r_os^2 + C_1C_2R_2R_2r_os^2 + C_1C_2R_2R_2r_os^4 + C_1C_2L_1L_1R_2s^4 + C_1C_2L_1L_1R_2s^4 + C_1C_2L_1R_1R_2s^4 + C_1C_2L_1R_1R_2s^3 + C_1C_2L_1R_1R_2s^3 + C_1C_2L_1R_1R_2s^3 + C_1C_2L_1R_2r_os^3 + C_1C_2R_2R_2r_os^3 + C_1C_2R_2R_2r_os^3$$

10.542 INVALID-ORDER-542 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 R_2 R_L r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 r_o s^4 + C_1 C_2 C_L L_L R_2 R_L r_o s^4 + C_1 C_2 C_L L_L R_2 R_L r_o s^4 + C_1 C_2 L_L R_2 R_L r_o s^4 + C_1 C_L R_2 R_L r_o s^4 + C_$$

**10.543** INVALID-ORDER-543 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$$

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 R_2 g_m r_o s^3 + C_1 C_2 L_1 r_o s^3 + C_1 C_2 L_1 r_o s^3 + C_1 C_2 R_1 R_2 g_m r_o s^2 + C_1 C_2 R_1 r_o s^2 + C_1 C_2 R_2 r_o s^2 + C_1 C_2 R_2 r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 g_m r_o s + C_1 R_1 s + C_1 R_1 s + C_1 R_2 s + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o s + C_2 R_2 r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_2 r_o s + C_2 R_2 g_m r_o s + C_2 R_2 r_o s + G_2 R_2 r_o$$

**10.544** INVALID-ORDER-544 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}s^{3} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}R_{1}R_{2}s^{2} + C_{1}C_{2}C_{L}R_{1}r_{o}s^{2} + C_{1}C_{2}C_{L}R_{2}r_{o}s^{2} + C_{1}C_{2}C_{L}R_{2}r_{o}s + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L}R_{1}g_{m}r_{o}s + C_{1}C_{L}R_{1}g_{m}$$

10.545 INVALID-ORDER-545 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^3 + C_1 C_2 C_L R_1 R_2 R_L s^3 + C_1 C_$$

**10.546** INVALID-ORDER-546 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{1}L_{1}s^{2}+C_{1}R_{1}s+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{1}r_{o}s^{3}+C_{1}C_{2}C_{L}R_{1}R_{2}s^{2}+C_{1}C_{2}C_{L}R_{1}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}C_{L}R_{2}r_{o}s^{2}+C_{1}C_{2}R_{2}r_{o}s^{2}+C_{1}C$$

**10.547** INVALID-ORDER-547 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{L}L_{L}s^{2}+1\right)\left(C_{1}L_{1}s^{2}+C_{1}R_{1}s+1\right)\left(C_{2}R_{2}g_{m}r_{o}s+C_{2}R_{2}s+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{2}C_{$$

10.548 INVALID-ORDER-548  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_LR_2g_mr_os^5 + C_1C_2C_LL_1L_LR_2s^5 + C_1C_2C_LL_1L_Lr_os^5 + C_1C_2C_LL_LR_1R_2g_mr_os^4 + C_1C_2C_LL_LR_1r_os^4 + C_1C_2C_LL_LR_1r_os^4 + C_1C_2C_LL_LR_2r_os^4 + C_1C_2L_LR_2r_os^4 + C_1C$ 

**10.549** INVALID-ORDER-549  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}R_{2}g_{m}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{$ 

**10.550** INVALID-ORDER-550  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 R_L s^5 + C_1 C_2 C_L L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L g_m r_o s^4 + C_$ 

10.551 INVALID-ORDER-551  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_2 q_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 C_L L_L R_1 R_2 q_m r_o s^4 + C_1 C_2 C_L L_L R_1 R_2 s^4 + C_1 C_2 C_L L_L R_1 r_o s^4 + C_1 C_2 C_L L_L R_2 r_o s^4 + C_1 C_$ 

10.552 INVALID-ORDER-552  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_I s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_L r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_2 g_m r_o s^4 + C_1$ 

**10.553** INVALID-ORDER-553  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$ 

 $H(s) = \frac{R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 L_2 g_m r_o s^4 + C_1 C_2 L_1 r_o s^3 + C_1 C_2 L_2 R_1 g_m r_o s^3 + C_1 C_2 L_2 R_1 s^3 + C_1 C_2 L_2 R_1 s^3 + C_1 C_2 L_2 r_o s^3 + C_1 C_2 R_1 r_o s^2 + C_1 L_1 g_m r_o s^2 + C_1 L_1 s^2 + C_1 R_1 g_m r_o s + C_1 R_1 s + C_1 R_1 s + C_1 R_1 s + C_1 R_2 s + C_2 R_2 r_o s^2 +$ 

**10.554** INVALID-ORDER-554  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}s^{4} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}R_{1}g_{m}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}R_{1}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}L_{2}r_{o}s^{2} + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} +$ 

10.555 INVALID-ORDER-555  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_L q_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L s^5 + C_1 C_2 C_L L_1 R_L r_o s^4 + C_1 C_2 C_L L_2 R_1 R_L g_m r_o s^4 + C_1 C_2 C_L L_2 R_1 R_L s^4 + C_1 C_2 C_L L_2 R_1 R_L r_o s^$ 

```
10.556 INVALID-ORDER-556 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{1}L_{1}s^{2}+C_{1}R_{1}s+1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+C_{2}L_{2}s^{2}+C_{2}r_{o}s+g_{m}r_{o}+1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4}+C_{1}C_{2}C_{L}L_{1}r_{o}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{1}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{3}+C_{1}C_{2}C_{L}L_{2}R_{2}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}L_{2}s^{2}+C_{1}C_{2}L_{2}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{1}C_{L}L_{1}g_{m}r_{o}s^{2}+C_{
10.557 INVALID-ORDER-557 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}L_{L}s^{2} + 1\right)\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{2}r_{o}s + C_{1}C_{L}L_{1}g_{m}r_{o}s^{2} + C_{1}C_{L}L_{1}s^{2} + C_{1}C_{L
10.558 INVALID-ORDER-558 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{1}{C_1C_2C_LL_1L_2L_Lg_mr_os^6 + C_1C_2C_LL_1L_2L_Ls^6 + C_1C_2C_LL_1L_Lr_os^5 + C_1C_2C_LL_2L_Rg_mr_os^5 + C_1C_2C_LL_2L_Lr_os^5 + C_1C_2C_LL_2L_2L_2r_os^5 + C_1C_2C_LL_2L_2r_os^5 + C_1C_2C_LL_2L_2r_os^5 + C_1C_2C_LL_2r_os^5 + C_1C_2C_LL_2r_os
10.559 INVALID-ORDER-559 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}R_{1}s^{3} + C_{1}C_{2}C_{L}L_{2}R_{1}s^{3} + C_{1}C_{2}C_{L}L_{2}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{2}L_{2}s^{2} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{2} + C_{1}C_{2}C_{L}L_{1}r_{o}s^{2}
10.560 INVALID-ORDER-560 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_I} + \frac{1}{L_I s}}\right)
10.561 INVALID-ORDER-561 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
```

$$H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}g_{m}r_{o}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{L}L_{s}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}g_{m}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}s^{5} + C_{1}C_{2}C_{L}L_{L}R_{1}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{L}R_{L}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{L}R_{L}r_{o}s^{4}$$

10.562 INVALID-ORDER-562 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_L s^5 + C_1 C_2 C_L L_2 L_1 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L R_1 r_o s^5 + C_1$$

**10.563** INVALID-ORDER-563 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ R_L\right)$$

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 L_2 g_m r_o s^4 + C_1 C_2 L_1 R_2 g_m r_o s^3 + C_1 C_2 L_1 R_2 s^3 + C_1 C_2 R_1 R_2 s^2 + C_1 C_2 R_1$$

 $\begin{aligned} & \mathbf{10.564} \quad \mathbf{INVALID\text{-}ORDER\text{-}564} \ Z(s) = \left(L_{1}s + R_{1} + \frac{1}{C_{1}s}, \ L_{2}s + R_{2} + \frac{1}{C_{2}s}, \ \infty, \ \infty, \ \frac{1}{C_{L}s}\right) \\ & & \frac{\left(C_{L}L_{2}^{2} + C_{L}R_{1}s + 1\right) \left(C_{2}L_{2}mr_{s}s^{2} + C_{L}L_{2}s^{2} + C_{2}R_{2}mr_{s}s + C_{2}R_{2}s + C_{2}R_{2}R_{2}s + C_{$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L R_1 g_m r_o s^5$ 

**10.569** INVALID-ORDER-569  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ L_L s + R_L + \frac{1}{C_L s}\right)$ 

10.570 INVALID-ORDER-570  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_Lg_mr_os^6 + C_1C_2C_LL_1L_2L_LR_Ls^6 + C_1C_2C_LL_1L_LR_2R_Lg_mr_os^5 + C_1C_2C_LL_1L_LR_Lr_os^5 + C_1C_2C_LL_2L_LR_1R_Lg_mr_os^5 + C_1C_2C_LL_2L_2L_2R_1R_2g_mr_os^5 + C_1C_2C_LL_2L_2R_1R_2g_mr_os^5 + C_1C_2C_LL_2L_2R_1R_2g_mr_os^5 + C_1C_2C_LL_2R_1R_2g_mr_os^5 + C_1C_2C_LL_2R_2g_mr_os^5 + C_1C_2C_LL_2R_2g_mr_os^5 + C_1C_2C_LR_2R_2g_mr_os^5 + C_1C_2C_LR_2R$ 

10.571 INVALID-ORDER-571  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 s^5 + C_1 C_2 C_L L_2 L_2 L_2 R_1 s^5 + C_1 C_2 C_L L_2 L_2 L_2 R_1 s^5 + C_1 C_2 C_L L_2 L_2 L_2 R_1 s^5 + C_1 C_2 C_L L_2 L_2 L_2 R_1 s^5 + C_1 C_2 C_L L_2 L_2 L_2 R_1 s^5 + C_1 C_2 C_L L_2 L_2 L_2 R_1 s^5 + C_1 C_2 C_L L_2 L_2 R_2 R_1 s^5 + C_1 C_2 C_L L_2 L_2 R_2 R_1 s^$ 

```
10.572 INVALID-ORDER-572 Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
```

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 R_2 g_$$

10.573 INVALID-ORDER-573 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + L_2 g_m r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_2 r_o s^3 + C_1 L_2 L_2 R_2 r_o s^3 + C_1 L_1 L_2 r_o s^3 + C_1 L_1 L_2 r_o s^3 + C_1 L_2 R_2 r_o s^3 + C_1 L_$$

10.574 INVALID-ORDER-574 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2} + C_{1}C_{2}L_{1}L_{2}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{2}R_{2}s^{3} + C_{1}C_{2}L_{1}L$$

10.575 INVALID-ORDER-575 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_2 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_2 R_1 R_2 R_L s^4 + C_1 C_2 C_$$

**10.576** INVALID-ORDER-576 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{(C_1C_2C_LL_1L_2R_2g_mr_os^4 + C_1C_2C_LL_1L_2R_2s^4 + C_1C_2C_LL_1L_2r_os^4 + C_1C_2C_LL_2R_1R_2g_mr_os^3 + C_1C_2C_LL_2R_1r_os^3 + C_1C_2C_LL_2R_1r_os^3 + C_1C_2C_LL_2R_2r_os^3 + C_1C_2$$

10.577 INVALID-ORDER-577 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_1C_2C_LL_1L_2R_2g_mr_os^4 + C_1C_2C_LL_1L_2R_2s^4 + C_1C_2C_LL_1L_2r_os^4 + C_1C_2C_LL_2L_1r_os^4 + C_1C_2C_LL_2R_1R_2g_mr_os^3 + C_1C_2C_LL_2R_1r_os^3 + C_1C_$$

10.578 INVALID-ORDER-578 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 L_1 r_o s^5 + C_1 C_2 C_$$

10.579 INVALID-ORDER-579 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{1}{s\left(C_{1}C_{2}C_{L}L_{1}L_{2}R_{2}g_{m}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}L_{2}R_{2}s^{4} + C_{1}C_{2}C_{L}L_{1}L_{2}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{2}L_{L}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{2}L_{1}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{2}R_{1}R_{2}g_{m}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}R_{1}r_{o}s^{3} + C_{1}C_{2}C_{L}L_{2}R_{1}r_{o}s^{$$

```
 \begin{aligned} \textbf{10.580} \quad \textbf{INVALID-ORDER-580} \ Z(s) &= \left( L_1 s + R_1 + \frac{1}{C_1 s}, \ \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}} \right) \\ H(s) &= \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 R_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 R_L s^6 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L R_2 R_L g_m r_o s^5 + C_1 C_2 C_L R_2 R_L
```

10.581 INVALID-ORDER-581 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_L L_2 L_2 R_2 r_2 s^5 + C_1 C_2 C_$$

10.582 INVALID-ORDER-582 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 R_2 g_m r_o s^5 + C_1 C_2 C_L L_2 R_2 g_m r_o s^5$$

**10.583** INVALID-ORDER-583 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{R_L \left( C_1 L_1 s^2 + C_1 R_1 s + 1 \right) \left( C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 R_2 r_o s + R_2 g_m r_o s^2 + C_2 L_2 R_2 r_o s^3 + C_1 C_2 L_2 R_2 r_o s^3 + C_$$

**10.584** INVALID-ORDER-584 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{\left(C_{1}L_{1}s^{2} + C_{1}R_{1}s + 1\right)\left(C_{2}L_{2}R_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{2}r_{o}s^{2} + C_{2}L_{2}R_{2}s^{2} + C_{2}L_{$$

10.585 INVALID-ORDER-585 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_7 s}}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^4 + C_1 C_2 C_L L_2 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_2 R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L L_2 R_$$

**10.586** INVALID-ORDER-586 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{(C_L R_L s + 1) \left(C_1 L_1 s^2 + C_1 C_2 C_L L_1 L_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 L_2 R_2 s^4 + C_1 C_2 C_L L_1 R_2 r_o s^3 + C_1 C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_1 C_2 C_L L_2 R_1 R_2 s^3 + C_1 C_2 C_L L_2 R_1 R_2 r_o s^3 + C$$

**10.587** INVALID-ORDER-587 
$$Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{(C_L L_L s^2 + 1)(C_1 L_1 s^2 + 1)(C_1 L_2 s^2$$

10.588 INVALID-ORDER-588  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_2s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_LR_2r_os^5 + C_1C_2C_LL_2L_LR_1R_2g_mr_os^5 + C_1C_2C_LL_2L_LR_1r_os^5 + C_1C_2C_LL_2L_2R_1r_os^5 + C_1C_2C_LL_2R_1r_os^5 + C_1C_2C_LR_1r_os^5 + C_1C_2C_LR_1r$ 

**10.589** INVALID-ORDER-589  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{1}{s \cdot (C_1 C_2 C_L L_1 L_2 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 L_2 R_2 s^4 + C_1 C_2 C_L L_1 L_2 r_o s^4 + C_1 C_2 C_L L_2 L_2 R_2 s^4 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^3 + C_1 C_2 C_L L_2 R_1 R_2 g_m r_o s^3 + C_1 C_2 C_L L_2 R_2 R_2 g_m r_o s^3 + C_1 C_2 C_L L_2 R_2 r_o s^3 + C_1 C_2 C_L L_2 R_2 r_o s^3 + C_1 C_2 C_L L_2 R_2$ 

**10.590** INVALID-ORDER-590  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 R_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 R_L r_o s^6 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L r_o s^5 + C_1 C_2 C_L L_2 L_2 R_L r_o s^5 + C_1 C_2 C_L L_2 L_2 R_L r_o s^5 + C_1 C_2 C_L L_2 R_L r_o s^5 + C_1 C_2 C_L L_2 R_2 R_L r_o s^5 + C_1 C_2 C_L L_2 R_2 R_L r_o s^5 + C_1 C_2 C_L L_2 R_2 R_L r_o s^5 + C_1 C_2 C_L L_2 R_L r_o s^5 + C_1 C_2 C_L L_2 R_2 R_L r_o s^5 + C_1 C_2 C_L L_2 R_2 R_L r_o s^5 + C_1 C_2 C_L R_2 R_L r_o s^5 + C_1 C_2 R_L r_o s^5$ 

**10.591** INVALID-ORDER-591  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{2}g_{m}r_{o}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{2}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}R_{2}g_{m}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{1}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{2}L_{L}R_{2}r_{o$ 

10.592 INVALID-ORDER-592  $Z(s) = \left(L_1 s + R_1 + \frac{1}{C_1 s}, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 R_2 R_L r_o s^5 + C_1 C_2 C_L R_1 R_2 R_L r_o s^5 + C_1 C_2 C_L R_1 R_2 R_L r_o s^5 + C_1 C_2 C_L R_1 R_2 R_L r_o s^5 + C_1 C_2 C_L R_$ 

**10.593** INVALID-ORDER-593  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 R_1 s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1 L_1 R_1 R_2 s^2 + C_1 L_1 R_1 r_o s^2 + C_L L_1 R_1 R_2 g_m r_o s^2 + C_L L_1 R_1 R_2 s^2 + C_L L_1 R_1 r_o s^2 + C_L L_1 R_1 r_o s^2 + C_L L_1 R_2 r_o s^2 +$ 

**10.594** INVALID-ORDER-594  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{L_1 R_1 R_2 s \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 R_1 R_2 R_L r_o s^3 + C_1 L_1 R_1 R_2 R_L s^2 + C_1 L_1 R_1 R_2 r_o s^2 + C_L L_1 R_1 R_2 R_L g_m r_o s^2 + C_L L_1 R_1 R_2 R_L s^2 + C_L L_1 R_1 R_2 R_L r_o s^2 + C_L L_1 R_1 R_2$ 

**10.595** INVALID-ORDER-595  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 R_1 s \left(C_L R_L s + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1 L_1 R_1 R_2 s^2 + C_L L_1 R_1 R_2 s^2 + C_L$ 

```
10.596 INVALID-ORDER-596 Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{L_1 R_1 s \left(C_L L_L s^2 + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 L_L R_1 R_2 s^4 + C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1 L_1 R_1 R_2 s^2 + C_1 L_1 R_1 r_o s^2 + C_L L_1 L_L R_2 s^3 + C_L L_1 L_L R_2 s^3 + C_L L_1 R_1 R_2 s^2 + C_
10.597 INVALID-ORDER-597 Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_1 L_L R_1 s^2 \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 L_1 L_L R_1 r_o s^3 + C_1 L_1 L_L R_1 r_o s^3 + C_L L_1 L_L R_1 R_2 g_m r_o s^3 + C_L L_1 L_L R_1 r_o s^3 + C_L L_1 L_L R_2 r_o s^3 
10.598 INVALID-ORDER-598 Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
H(s) = \frac{L_1 R_1 s \left(C_L L_L s^2 + C_L R_L s + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 L_L R_1 R_2 s^4 + C_1 C_L L_1 R_1 R_2 R_L s^3 + C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1 L_1 R_1 R_2 s^2 + C_1 L_1 R_1 R_2 s^3 + C_L L_1 L_L R_2 s^3 + C_L L_1 R_1 R_2 g_m r_o s^2 + C_L L_1 R_1 R_2 s^2 + C_L L_1 R_1 R_2 s^2 + C_L L_1 R_1 R_2 s^3 + C_L L_1 R_1 R_2 s^
10.599 INVALID-ORDER-599 Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_2} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_2} + \frac{1}{L_1 s}}\right)
H(s) = \frac{L_{1}L_{L}R_{1}R_{L}s^{2}\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{L}L_{1}L_{L}R_{1}R_{2}R_{L}r_{o}s^{4} + C_{1}L_{1}L_{L}R_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}L_{L}R_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}L_{L}R_{1}R_{2}R_{L}r_{o}s^{3} + C_{L}L_{1}L_{L}R_{1}R_{2}R_{L}r_{o}s^{3} + 
10.600 INVALID-ORDER-600 Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
H(s) = \frac{L_1 R_1 s \left(R_2 g_m r_o + R_2 + r_o\right) \left(C_1 R_1 R_2 R_L s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 s^3 + C_1 L_1 L_L R_1 R_2 r_o s^4 + C_1 L_1 L_L R_1 R_2
10.601 INVALID-ORDER-601 Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)
H(s) = \frac{L_1 R_1 R_2}{C_1 C_L L_1 L_L R_1 R_2 R_L s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^3 + C_1 L_1 L_L R_1 R_2 r_o s^3 + C_1 L_1 R_1 R_2 r_o s^3 + C_
10.602 INVALID-ORDER-602 Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)
                                                                                                                                                                                                                                                       H(s) = \frac{L_1 R_1 R_L s \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_2 L_1 R_1 r_o s^2 + C_2 L_1 R_L r_o s^2 + C_2 R_1 R_L r_o s + L_1 R_1 g_m r_o s + L_1 R_1 s + L_1 R_L s + L_1 r_o s + R_1 R_L + R_1 r_o s^2 + C_2 R_1 R_L r_o s^2 + C_2 R_1 R_L r_o s^2 + C_2 R_1 R_L r_o s + L_1 R_1 r_o s + L_1 R_1 r_o s + R_1 R_L r_o s 
10.603 INVALID-ORDER-603 Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
```

 $H(s) = \frac{L_1 R_1 s \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 r_o s^3 + C_2 L_1 r_o s^3 + C_2 L_1 r_o s^2 + C_2 R_1 r_o s + C_L L_1 R_1 g_m r_o s^2 + C_L L_1 R_1 s^2 + C_L L_1 r_o s^2 + C_L R_1 r_o s + L_1 s + R_1 r_o s^2 + C_2 R_$ 

**10.605** INVALID-ORDER-605  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{L_1 R_1 s \left(C_L R_L s + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 r_o s^3 + C_2 C_L L_1 R_1 r_o s^3 + C_2 C_L L_1 R_L r_o s^3 + C_2 C_L L_1 R_L r_o s^2 + C_2 L_1 r_o s^2 + C_2 L_1 R_1 r_o s^$ **10.606** INVALID-ORDER-606  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$  $H(s) = \frac{L_1 R_1 s \left(C_L L_L s^2 + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 L_L R_1 r_o s^3 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 R_1 r_o s^3 + C_2 C_L L_1 L_L r_o s^4 + C_2 C_L L_1 L_1 r_o s^3 + C_2 L_L L_1 R_1 r_o s^3 + C_2 L_1 L_1 R_1 s^3 + C_L L_1 R_1 g_m r_o s^2 + C_L L_1 R_1 s^2 + C_L L_1 R_1 s^2 + C_L L_1 R_1 r_o s^3 + C_L L_1 R_1$ 10.607 INVALID-ORDER-607  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$  $H(s) = \frac{L_1 L_L R_1 s^2 \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 L_L L_L R_1 r_o s^4 + C_1 L_L L_L R_1 r_o s^4 + C_2 L_L R_1 r_o s^4$ **10.608** INVALID-ORDER-608  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$  $H(s) = \frac{L_1 R_1 s \left(C_2 r_o s + g_m r_o + 1\right) \left(C_L L_L s^2 + C_L R_L s + 1\right)}{C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 L_L R_1 R_L r_o s^4 + C_1 C_L L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_L R_1 r_o s^3 + C_2 C_L L_1 R_L r_o s^3 + C_2 C_L R_1 R_L r_o s^3 + C_2 C_$ **10.609** INVALID-ORDER-609  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$  $H(s) = \frac{L_1 L_L R_1 R_L r^3 \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 L_L R_1 R_L r_o s^4 + C_1 L_L L_L R_1 R_L r_o s^3 + C_1 L_1 L_L R_1 R_L r_o s^3 + C_2 L_1 R_$ 10.610 INVALID-ORDER-610  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$  $H(s) = \frac{L_1 R_1 s \left(C_2 r_o s + g_m r_o + 1\right) \left(C_L L_L R_L s + C_1 C_2 L_1 L_L R_1 r_o s^5 + C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 C_L L_L L_L R_1 r_o s^4 + C_1 C_L L_L L_L R_1 r_o s^4 + C_2 C_L R_1$ 10.611 INVALID-ORDER-611  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{L_1 s}}\right)$  $H(s) = \frac{L_1 R_1 R_L s \left(C_L L_L s^2 + C_2 C_L L_1 L_L R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L r_o s^3 + C_2 C_L L_1 L_L R_1 r_o s^4 + C_2 C_L L_1 L_L R_1 r_o s^4 + C_2 C_L L_1 R_1 R_L r_o s^3 + C_2 L_1 R_1 R_L r_o s^3$ 

 $H(s) = \frac{L_1 R_1 R_L s \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 R_L r_o s^3 + C_2 L_1 R_1 R_L r_o s^3 + C_2 L_1 R_1 R_L r_o s^2 + C_2 L_1 R_1 R_L r_o s^2 + C_L L_1 R_1$ 

**10.604** INVALID-ORDER-604  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

**10.612** INVALID-ORDER-612  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{L_1 R_1 R_2 S \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 L_1 R_1 R_2 R_L s^2 + C_1 L_1 R_1 R_2 r_o s^2 + C_2 L_1 R_2 R_L r_o s^2 + C_2 L_1 R_2 R_L r_o s^2 + C_2 L_1 R_2 R_L r_o s + L_1 R_1 R_2 s + L_1 R_1 r_o s + L_1 R_2 r_o s + L_1 R_$ 

**10.613** INVALID-ORDER-613  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 R_1 s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 L_L R_1 R_2 r_o s^3 + C_1 L_L R_1 R_2 r_o s^2 + C_2 L_L R_1 R_2 r_o s^3 + C_2 L_L R_2 r_o s^3 + C_2 L_L R_2 r_o s^3 + C_2 L_L$ 

**10.614** INVALID-ORDER-614  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{L_1 R_1 R_L s \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 L_1 R_1 R_2 R_L r_o s^2 + C_1 L_1 R_1 R_2 R_L r_o s^3 + C_2 L_1 R_2 R_L r_o s^3 + C_$ 

**10.615** INVALID-ORDER-615  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 R_1 s \left(C_L R_L s + 1\right) \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1$ 

**10.616** INVALID-ORDER-616  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 R_1 s \left(C_L L_L s^2 + 1\right) \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 C_L L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_2 C_L L_1 L_L R_1 R_2 r_o s^4 + C_2 C_L L_1 R_1 R_2$ 

10.617 INVALID-ORDER-617  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_1 L_L R_1 s^2 \left(C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_2 L_1 L_L R_1 R_2 r_o s^4 + C_1 L_L L_L R_1 R_2 r_o s^4 + C_1 L_L L_L R_1 R_2 r_o s^4 + C_2 L_1 R_2 r_o s^4 +$ 

**10.618** INVALID-ORDER-618  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_L L_1 L_L R_1 R_2 s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1 C_L L_1 R_1 R_2 r_o s^4 + C_$ 

10.619 INVALID-ORDER-619  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_1} + \frac{1}{L_1 s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 L_1 L_L R_1 R_2 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L r_o s^4 + C_1 L_1 L_L R_1 R_2 R_L r_o s^3 + C_1 L_1 L_L R_1 R_2 R_L r_o s^3 + C_1 L_1 L_L R_1 R_2 R_L r_o s^3 + C_1 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 L_L R_1 R_2 R_L r_o s^3 + C_2 L_1 R_2 R_L r_$ 

**10.620** INVALID-ORDER-620  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 R_L r_o s^5 + C_1 C_2 L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 L_L L_L R_1 R_2 r_o s^4$ 

10.621 INVALID-ORDER-621  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 R_L r_o s^5 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_L L_1 L_L R_1 R_2 R_L s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L r_o s^4 + C_1 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_L R_1 R_$ 

**10.622** INVALID-ORDER-622  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{L_1 R_1 R_L s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_2 L_1 R_1 R_2 g_m r_o s^2 + C_2 L_1 R_1 r_o s^2 + C_2 L_1 R_2 r_o s^2 +$ 

10.623 INVALID-ORDER-623  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 R_1 s \left(C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 R_1 R_2 r_o s^4 + C_1 C_2 L_1 R_1 R_2 s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 s^2 + C_2 C_L L_1 R_1 R_2 g_m r_o s^3 + C_2 C_L L_1 R_1 r_o s^3 + C_2 C_L L_1 R_1 r_o s^3 + C_2 C_L L_1 R_1 r_o s^3 + C_2 C_L L_1 R_2 r_o s^3 + C_2 C_$ 

10.624 INVALID-ORDER-624  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{L_1 R_1 R_2 s \left(C_2 R_2 R_3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L s^3 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_2 C_2 L_1 R_2 r_o s^3 + C_2 C_2 L_2 r_o s^3 + C_2 C_2 L_2 r_o s^3 + C_2 C_2 L$ 

**10.625** INVALID-ORDER-625  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 K_1 s \left(C_L K_L s + 1\right) \left(C_2 K_2 g_m r_o s + C_2 K_2 s + C_2 K_2 s + C_2 K_2 r_o s + C_2 K_2 r$ 

**10.626** INVALID-ORDER-626  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $\frac{L_1R_1s\left(C_LL_Ls^2+1\right)\left(C_2R_2g_mr_os+C_2R_2s+C_2C_LL_1L_LR_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1L_1s^3+C_2C_LL_1L_1s^3+C_2C_LL_1L_1s^3+C_2C_LL$ 

10.627 INVALID-ORDER-627  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_1 L_L R_1 s^2 \left( C_2 C_2 L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_L R_1 R_2 s^4 + C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 L_L L_L R_1 r_o s^4 + C_1 L_L L_L R_1 r_o s^4 + C_2 C_L L_L L_L R_1 R_2 r_o s^4 + C_2 C_L L_L L_L R_1 r_o s^4 + C_2 C_L R_$ 

**10.628** INVALID-ORDER-628  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_LR_1R_2s^5 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2C_LL_1R_1R_2r_os^4 + C_1C_2L_LR_1R_2r_os^4 + C_1C_2L_1R_1R_2r_os^4 + C_1C_2L$ 

**10.629** INVALID-ORDER-629  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 R_L r_o s^5 + C_1 C_2 L_1 L_L R_1 R_2 R_L s^4 + C_1 C_2 L_1 L_L R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_L R_$ 

**10.630** INVALID-ORDER-630  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_LR_1R_2R_Ls^5 + C_1C_2C_LL_1L_LR_1R_2r_os^5 + C_1C_2L_1L_LR_1R_2s^4 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1L_LR_1R_2s^4 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1L_LR_1r_os^4 + C_1C_2L_1R_1R_2r_os^4 + C_1C_2L_1R_2r_os^4 + C_1C$ 

10.631 INVALID-ORDER-631  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_LR_1R_2R_Ls^5 + C_1C_2C_LL_1L_LR_1R_2r_os^5 + C_1C_2C_LL_1L_LR_1R_2r_os^5 + C_1C_2L_1R_1R_2R_Ls^3 + C_1C_2L_1R_1R_2r_os^3 + C_1C_2L_1R_1R_Lr_os^3 + C_1C_LL_1L_LR_1R_Ls^4 + C_1C_LL_1L_LR_1r_os^4 + C_1C_LL_1R_1R_Lr_os^3 + C_1C_LL_1R_1R_Lr_os^4 + C_1C_LL_1R_1R_Lr_os^4$ 

**10.632** INVALID-ORDER-632  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{L_1 R_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 L_1 L_2 R_1 R_L s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 R_1 R_L r_o s^3 + C_1 L_1 R_1 R_L s^2 + C_1 L_1 R_1 r_o s^2 + C_2 L_1 L_2 R_1 g_m r_o s^3 + C_2 L_1 L_2 R_1 s^3 + C_2 L_1 L_2 R_1 s^3 + C_2 L_1 L_2 r_o s^3 + C_2 L_1 R_L r_o s^2 + C_2 L_2 R_1 R_L s^2 + C_2 L_2 R_$ 

**10.633** INVALID-ORDER-633  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 R_1 s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 L_1 L_2 R_1 s^4 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 L_1 R_1 r_o s^3 + C_1 L_1 R_1 r_o s^4 + C_2 C_L L_1 L_2 R_1 g_m r_o s^4 + C_2 C_L L_1 L_2 r_o s^4 + C_2 C_L L_1 L_2 r_o s^3 + C_2 L_1 r_o s^$ 

**10.634** INVALID-ORDER-634  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{L_1 R_1 R_L s \left(C_2 L_{29} + C_1 C_2 L_1 L_2 R_1 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_L s^4 + C_1 C_2 L_1 L_2 R_1 R_L r_o s^3 + C_1 L_1 R_$ 

10.635 INVALID-ORDER-635  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{L_1 K_1 s \left( C_L K_L s + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 L_2 L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1$ 

**10.636** INVALID-ORDER-636  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

10.637 INVALID-ORDER-637  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

 $H(s) = \frac{L_1 L_L R_1 s^2 \left(C_2 L_2 L_2 L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 L_1 L_2 L_L R_1 s^5 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 L_L L_L R_1 r_o s^4 +$ 

**10.638** INVALID-ORDER-638  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1s^6 + C_1C_2C_LL_1L_2R_1R_Ls^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_1s^4 + C_1C_2L_1R_1r_os^3 + C_1C_LL_1R_1r_os^3 + C_1C_LL_1R$ 

**10.639** INVALID-ORDER-639  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_1} + \frac{1}{L_1 s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_L r_o s^6 + C_1 C_2 L_1 L_2 L_L R_1 R_L s^5 + C_1 C_2 L_1 L_2 L_L R_1 r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_L R_1 R_L r_o$ 

10.640 INVALID-ORDER-640  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 L_L L_L R_1 r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_L s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_2 R_1 r_o s^4 + C_1 C_2 L_2 R_1 r_o s^4 + C_1 C_2 L_2 R_$ 

10.641 INVALID-ORDER-641  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_L r_o s^4 + C_1 C_2 L_1 R_1$ 

**10.642** INVALID-ORDER-642  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{L_1 R_1 R_L s \left(C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o s^2 + C_2 L_2 R_1 R_2 r_o s^3 + C_2 L_1 L_2 R_1 R_2 r_o s^3 + C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 L_2 R_1 R_2 r_o s^3 + C_1 L_1 R_1 R_2 r_o s^3 + C_2 L_1 L_2 R_1 g_m r_o s^3 + C_2 L_1 L_2 R_1 s^3 + C_2 L_1 L_2 R_1 s^3 + C_2 L_1 L_2 R_1 r_o s^3 + C_2 L_1 R_1 R_2 r_o s^3 + C_2 L_1 R_2 r_o s^3$ 

10.643 INVALID-ORDER-643  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $\frac{L_{1}n_{1}s\left(\bigcup_{2}L_{2}g_{m}r_{o}s\right.+\bigcup_{2}L_{2}s\right.+\bigcup_{2}n_{2}g_{m}r_{o}s\right.+\bigcup_{2}n_{2}s}{C_{1}C_{2}C_{L}L_{1}L_{2}R_{1}r_{o}s^{5}+C_{1}C_{2}L_{L}L_{1}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}L_{2}R_{1}s^{4}+C_{2}C_{L}L_{1}L_{2}R_{1}s^{4}+C_{2}C_{L}L_{1}R_{1}R_{2}s^{3}+C_{2}C_{L}L_{1}R_{1}R_{2}s^{3}+C_{2}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{1}R_{2}s^{3}+C_{2}C_{L}L_{1}R_$ 

- **10.644** INVALID-ORDER-644  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_L r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_L s^4 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 L_1$
- **10.645** INVALID-ORDER-645  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^3 + C_1 C_L L_1 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^4 + C_1 C_$
- **10.646** INVALID-ORDER-646  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^4$
- **10.647** INVALID-ORDER-647  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 L_L R_1 s^5 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 C_2 L_1 R_1 r_$
- 10.648 INVALID-ORDER-648  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1s^6 + C_1C_2C_LL_1L_2R_1R_2s^5 + C_1C_2C_LL_1L_2R_1r_0s^5 + C_1C_2C_LL_1L_2R_1r_0s^5 + C_1C_2C_LL_1R_1R_2r_0s^4 + C_1C_2C$
- **10.649** INVALID-ORDER-649  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_L r_o s^6 + C_1 C_2 L_L L_L R_1 R_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 L_L R_1 R_L s^5 + C_1 C_2 L_1 L_2 L_L R_1 R_L r_o s^4 + C_1 C_2 L_1 L_L R_1 R_2 r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_$
- **10.650** INVALID-ORDER-650  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_Ls^6 + C_1C_2C_LL_1L_2L_Rr_0s^6 + C_1C_2C_LL_1L_LR_1R_2r_0s^5 + C_1C_2C_LL_1L_LR_1R_2r_0s^5 + C_1C_2L_1L_2L_Rr_0s^5 + C_1C_2L_1L_2R_1r_0s^4 + C_1C_2L_2R_1r_0s^4 + C_1C_2R_1r_0s^4 + C_1C_2R_1r_0s^4 + C_1C_2R_1r_0s^4 + C_1C_2R_1r$
- 10.651 INVALID-ORDER-651  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_Ls^6 + C_1C_2C_LL_1L_2L_LR_1r_os^6 + C_1C_2C_LL_1L_2R_1R_Lr_os^5 + C_1C_2C_LL_1L_LR_1R_2r_os^5 + C_1C_2C_LL_1L_1R_1R_2r_os^5 + C_1C_2C_LL_1L_1R_1R_2r_os^5 + C_1C_2C_LL_1L_1R_1R_2r_os^5 + C_1C_2C_LL_1R_1R_2R_Lr_os^4 + C_1C_2L_1L_2R_1R_Ls^4 + C_1C_2L_1L_2R_1R_2r_os^4 + C_1C_2L_1R_1R_2R_Ls^4 + C$

**10.652** INVALID-ORDER-652  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)$ 

 $H(s) = \frac{L_1 R_1 R_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 g_m r_o s^2 + C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 L_1 L_2 R_1 R_2 r_o s^3 + C_1 L_1 R_1 R_2 r_o s^2 + C_1 L_1 R_1 R_2 r_o s^3 + C_2 L_1 L_2 R_1 R_2 r_o s^3 + C_2 L_2 R$ 

**10.653** INVALID-ORDER-653 
$$Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

 $H(s) = \frac{L_1 R_1 s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_1 L_2 R_1 R_2 r_o s^3 + C_1 L_1 L_2 R_1 R_2 s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_L L_1 L_2 R_1 r_o s^4 + C_2 C_L L_1 L_2 R_1 r$ 

10.654 INVALID-ORDER-654 
$$Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2R_1R_2R_Lr_os^5 + C_1C_2L_1L_2R_1R_2R_Ls^4 + C_1C_2L_1L_2R_1R_2r_os^4 + C_1C_LL_1L_2R_1R_Lr_os^4 + C_1C_LL_1R_1R_2R_Lr_os^4 + C$ 

**10.655** INVALID-ORDER-655 
$$Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 r_o s^5 + C_1 C_2 L_L L_2 R_1 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_2 s^4 + C_1 C_L L_1 L_2 R_1 R_L s^4 + C_1 C_L L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_L L_1 R_1 R_2 r_o s^3 + C_1 C_L L_1 R_1 R_2 r_o s^3$ 

**10.656** INVALID-ORDER-656 
$$Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^4 + C_1 C_L L_1 L_2 R_1 r_o s^4 + C_$ 

10.657 INVALID-ORDER-657 
$$Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

**10.658** INVALID-ORDER-658 
$$Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2s^6 + C_1C_2C_LL_1L_2L_LR_1r_os^6 + C_1C_2C_LL_1L_2R_1R_2r_os^5 + C_1C_2C_LL_1L_2R_1R_2s^4 + C_1C_2L_1L_2R_1R_2s^4 + C_1C_LL_1L_2R_1R_2s^4 + C_1C_LL_1L_2R_1R_2s$ 

**10.659** INVALID-ORDER-659 
$$Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2R_Lr_os^6 + C_1C_2L_1L_2L_LR_1R_2R_Ls^5 + C_1C_2L_1L_2L_LR_1R_2r_os^5 + C_1C_2L_1L_2L_LR_1R_Lr_os^5 + C_1C_2L_1L_2L_LR_1R_Lr_os^5 + C_1C_LL_1L_2L_LR_1R_Lr_os^5 + C_1C_LL_1L_2L_LR_1R_2R_Lr_os^4 + C_1L_1L_2L_LR_1R_2R_Lr_os^4 + C_1L_1L_2L_RR_1R_2R_Lr_os^4 + C_1L_1L_2L_RR_1R_2R$ 

- **10.660** INVALID-ORDER-660  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 L_L L_L L_R R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_1 R_2 r_o s^6 + C_1 C_2 L_$
- **10.661** INVALID-ORDER-661  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_L r_o s^6 + C_1 C_2 L_L L_2 R_1 R_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 R_1 R_2$
- 10.662 INVALID-ORDER-662  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty\right)$
- $H(s) = \frac{L_1 R_1 R_L s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 L_2 R_2 R_2 s^2 + C_2 L_2 R_2 R_2 r_o s^2 + C_2 L_2 R_2 r_o$
- **10.663** INVALID-ORDER-663  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
- $H(s) = \frac{L_1 R_1 s \left(C_2 L_2 R_2 g_m r_o s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 R_2 s^2 + C_2 L_2 r_o s^2 + C_2 L_2 R_2 s^2 +$
- 10.664 INVALID-ORDER-664  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_2 R_L s^4 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 R_L r_o s^3 + C_1 L_1 R_1 R_2 R_L$
- **10.665** INVALID-ORDER-665  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 s^4 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^3 + C_1 C_L L_1 R_1$
- **10.666** INVALID-ORDER-666  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_2 s^4 + C_1 C_2 L_2 R_1 R_2 s^$
- 10.667 INVALID-ORDER-667  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2r_os^6 + C_1C_2L_1L_2L_LR_1R_2s^5 + C_1C_2L_1L_2L_LR_1r_os^5 + C_1C_2L_1L_2R_1R_2r_os^4 + C_1C_2L_1L_LR_1R_2r_os^4 + C_1C_LL_1L_LR_1R_2r_os^4 + C_1L_1L_LR_1R_2s^3 + C_1L_1L_LR_1r_os^3 + C_1L_1R_1R_2r_os^4 + C_1L_1L_LR_1R_2r_os^4 + C_1L_1L_1R_1R_2r_os^4 + C_1L_1R_1R_2r_os^4 + C_1L$

**10.668** INVALID-ORDER-668  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2s^6 + C_1C_2C_LL_1L_2L_LR_1r_os^6 + C_1C_2C_LL_1L_2R_1R_2r_os^5 + C_1C_2C_LL_1L_2R_1R_2r$ 

**10.669** INVALID-ORDER-669  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2R_Lr_os^6 + C_1C_2L_1L_2L_LR_1R_2R_Ls^5 + C_1C_2L_1L_2L_LR_1R_2r_os^5 + C_1C_2L_1L_2R_1R_2R_Lr_os^4 + C_1C_LL_1L_LR_1R_2R_Lr_os^4 + C_1C_LL_1L_1R_1R_2R_Lr_os^4 + C_1C_LL_1R_1R_2R_Lr_os^4 + C_1C_LL_1R_1R_2R_Lr_os^4 + C_1C_LL_1R_1R_2R_Lr_os^4 + C_1C_LL_1R_1R_2R_Lr_os^4 + C_1C_LL_1R_1R_2R_Lr_os^4 + C$ 

10.670 INVALID-ORDER-670  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2R_Ls^6 + C_1C_2C_LL_1L_2L_LR_1R_2r_os^6 + C_1C_2C_LL_1L_2L_RR_1R_2r_os^6 + C_1C_2L_1L_2L_LR_1R_2r_os^6 + C_1C_2L_1L_2L_RR_1R_2r_os^6 + C_1C_2L_1L_2R_1R_2r_os^6 + C_1C_2L_2R$ 

10.671 INVALID-ORDER-671  $Z(s) = \left(\frac{1}{C_1 s + \frac{1}{R_1} + \frac{1}{L_1 s}}, \frac{R_2\left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L\left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$ 

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2R_Ls^6 + C_1C_2C_LL_1L_2L_LR_1R_2r_os^6 + C_1C_2C_LL_1L_2L_RR_1R_Lr_os^6 + C_1C_2C_LL_1L_2R_1R_2R_Lr_os^5 + C_1C_2L_1L_2R_1R_2R_Lr_os^5 + C_1C_2L_1L_2R_1R_2R_Ls^4 + C_1C_2L_1L_2R_1R_2r_os^4 + C_1C_2L_2R_1R_2r_os^4 + C_1C_2L_2R_1R_2r_os^4 + C_1C_2L_2R_2r$ 

**10.672** INVALID-ORDER-672  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)\left(C_{1}L_{1}R_{1}s^{2} + L_{1}s + R_{1}\right)}{C_{1}C_{L}L_{1}R_{1}R_{2}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}R_{2}s^{2} + C_{1}L_{1}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}r_{o}s^{2} + C_{L}R_{1}R_{2}g_{m}r_{o}s + C_{L}R_{1}R_{2}s + C_{L}R_{1}r_{o}s + C_{L}R_{1$ 

**10.673** INVALID-ORDER-673  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

 $H(s) = \frac{R_L \left( R_2 g_m r_o + R_2 + r_o \right) \left( C_1 L_1 R_1 s^2 + L_1 s + R_1 \right)}{C_1 C_L L_1 R_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 R_L r_o s^3 + C_1 C_L L_1 R_1 R_2 g_m r_o s^2 + C_1 L_1 R_1 R_2 s^2 + C_1 L_1 R_1 r_o s^2 + C_1 L_1 R_2 r_o s^2 + C_1 L_1 R_$ 

**10.674** INVALID-ORDER-674  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_L R_L s + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right) \left(C_1 L_1 R_1 s^2 + L_1 s + R_1\right)}{C_1 C_L L_1 R_1 R_2 g_m r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 C_L L_1 R_2 r_o s^3 + C_1 C_L L_1 R_2 r_o s^3 + C_1 C_L L_1 R_2 r_o s^3 + C_1 L_1 R_2 s^2 + C_L L_1 R_2 s^2 + C_L L_1 R_2 s^2 + C_L L_1 R_2 g_m r_o s^2 + C_L L_1 R_2 g_m r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1$ 

**10.675** INVALID-ORDER-675  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

 $H(s) = \frac{\left(C_{L}L_{L}s^{2}+1\right)\left(R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)\left(C_{1}L_{1}R_{1}s^{2}+L_{1}s+R_{1}\right)}{C_{1}C_{L}L_{1}L_{L}r_{o}s^{4}+C_{1}C_{L}L_{1}R_{1}R_{2}s^{3}+C_{1}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}L_{1}R_{2}s^{2}+C_{L}L_{1}R_{2$ 

**10.676** INVALID-ORDER-676  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{L_L s \left(R_2 g_m r_o + R_2 + r_o\right) \left(C_1 L_1 R_1 s^2 + L_1 s + R_1\right)}{C_1 C_L L_1 L_L R_1 R_2 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 L_1 L_L R_2 s^3 + C_1 L_1 L_L R_2 s^3 + C_1 L_1 R_1 R_2 s^2 + C_1 L_1 R_1 r_o s^2 + C_1 L_1 R_1 r_o s^2 + C_1 L_1 R_1 r_o s^2 + C_1 L_1 L_L R_2 g_m r_o s^3 + C_L L_1 L_L R_2 s^3 + C_L L_1 L_L R_2 r_o s^3 + C_L L_1 L_L R_2 r_o$$

10.677 INVALID-ORDER-677  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)\left(C_{1}L_{1}R_{1}s^{2} + L_{1}s + R_{1}\right)}{C_{1}C_{L}L_{1}L_{L}R_{2}s^{4} + C_{1}C_{L}L_{1}R_{1}R_{2}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}R_{2}s^{3} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2}$$

**10.678** INVALID-ORDER-678  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$ 

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 L_L L_L R_1 R_2 g_m r_o s^3 + C_1 L_1 L_L R_1 R_2 g_m r_o s^3 + C_1 L_1 L_L R_1 R_2 r_o$$

10.679 INVALID-ORDER-679  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

$$H(s) = \frac{(R_2 g_m r_o + R_2 + r_o) \left(C_1 L_2 L_2 L_1 L_2 R_1 R_2 g_m r_o s^4 + C_1 C_L L_1 L_2 R_1 R_2 s^4 + C_1 C_L L_1 L_2 R_2 r_o s^4 + C_1 C_L L_1 L_2 R_2 r_o s^4 + C_1 C_L L_1 L_2 R_2 r_o s^4 + C_1 L_2 L_2 R_2$$

10.680 INVALID-ORDER-680 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_I s}}\right)$$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_2 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 R_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 r_o s^4 + C_1 C_L L_1$$

**10.681** INVALID-ORDER-681  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$ 

**10.682** INVALID-ORDER-682  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{1}L_{1}R_{1}s^{2} + L_{1}s + R_{1}\right)}{C_{1}C_{2}C_{L}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{2}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{2} + C_{L}L_{1}g_{m}r_{o}s^{2} + C_{L}L_{1}s^{2} + C_{L}R_{1}g_{m}r_{o}s + C_{L}R_{1}$$

**10.683** INVALID-ORDER-683  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{R_L \left( C_2 r_o s + g_m r_o + 1 \right) \left( C_1 L_1 R_1 s^2 + L_1 s + R_1 \right)}{C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_L L_1 R_1 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 L_1 R_1 r_o s^3 + C_2 L_1 R_1 r_o s^$$

```
10.684 INVALID-ORDER-684 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)\left(C_{1}L_{1}R_{1}s^{2}+L_{1}s+R_{1}\right)}{C_{1}C_{2}C_{L}L_{1}R_{1}r_{o}s^{4}+C_{1}C_{2}L_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}s^{3}+C_{1}C_{L}L_{1}R_{2}s^{3}+C_{1}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}R_{1}r_{o}s^{2}+C_{2}C_{L}R_{1}r_{o}s^{2}+C_{2}r_{o}s+C_{L}L_{1}g_{m}r_{o}s^{2}+C_{L}L_{1}s^{2}+C_{L}R_{1}g_{m}r_{o}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{L}R_{1}s+C_{
10.685 INVALID-ORDER-685 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}L_{S}^{2}+1\right)\left(C_{2}r_{o}s+g_{m}r_{o}+1\right)\left(C_{1}L_{1}R_{1}s^{2}+L_{1}s+R_{1}\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{5}+C_{1}C_{2}L_{L}r_{o}s^{3}+C_{1}C_{L}L_{1}L_{2}s^{4}+C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3}+C_{1}C_{L}L_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2}C_{L}L_{1}r_{o}s^{3}+C_{2
10.686 INVALID-ORDER-686 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_L s \left(C_2 r_o s + g_m r_o + 1\right) \left(C_1 L_1 R_1 s^2 + L_1 s + R_1\right)}{C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 L_1 L_L r_o s^4 + C_1 C_L L_1 L_L R_1 g_m r_o s^4 + C_1 C_L L_1 L_L r_o s^4 + C_1 L_1 L_L r_o s^4 + C_2 L_L L_L R_1 r_o s^3 + C_2 L_1 r_o s^2 + C_2 L_L r_o s^4 + C_2 L_L r_o s^
10.687 INVALID-ORDER-687 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{2}r_{o}s + g_{m}r_{o} + 1\right)\left(C_{L}L_{L}s^{2} + C_{L}R_{L}s + 1\right)\left(C_{1}L_{1}R_{1}s^{2} + L_{1}s + R_{1}\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{2}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}R_{2}s^{3} + C_{1}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{1}r_{o}s^{3} + C_{2}C_{L}L_{1}r_
10.688 INVALID-ORDER-688 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_I} + \frac{1}{L_I s}}\right)
H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_L r_o s^4 + C_1 L_1 L_L R_1 r_o s^4 + C_1 L_1 L_1 
10.689 INVALID-ORDER-689 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)
```

10.689 INVALID-ORDER-689 
$$Z(s) = \left(\frac{Z_1}{C_1L_1s^2+1} + R_1, \frac{1}{C_2s}, \infty, \infty, \infty, \infty, \frac{Z_2}{C_LL_Ls^2+1} + R_L\right)$$

 $H(s) = \frac{(C_2 r_o s + g_m r_o + 1)(C_1 L_1 R_1 s + L_1 s + L_2 s + L_3 r_o s + L_4 L_4 R_1 r_o s + L_4 R_4 r$ 

10.690 INVALID-ORDER-690 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2C_LL_1R_1R_Lr_os^4 + C_1C_LL_1R_1r_os^3 + C_1C_LL_1L_LR_1s^4 + C_1C_LL_1L_1L_1R_1s^4 + C_1C_LL_1L_1R_1s^4 + C_1C_LL_1L_1R_1s^4 + C_1C_LL_1L_1R_1s^4 + C_1C_LL_1L_1R_1s^4 + C_1C_LL_1L_1R_1s^4 + C_1C_LL_1R_1s^4 + C_1C_LL_1R_1s$ 

**10.691** INVALID-ORDER-691 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$$

 $R_L \left( C_1 L_1 R_1 s^2 + L_1 s + R_1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)$  $H(s) = \frac{R_L \left( C_1 L_1 R_1 s^2 + L_1 s + R_1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^2 + C_1 L_1 R_1 R_2 s^2 + C_1 L_1 R_1 r_o s^2 + C_1 L_1 R_2 r_o s^2 + C_1 L_1 R_2 r_o s^2 + C_2 L_1 R_2 r_o s^2 + C_2 R_1 R_2 r_o s + L_1 R_2 g_m r_o s + L_1 R_2 g_m r_o + R_1 R_2 g_$ 

```
10.692 INVALID-ORDER-692 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{1}L_{1}R_{1}s^{2} + L_{1}s + R_{1}\right)\left(C_{2}R_{2}r_{o}s + R_{2}g_{m}r_{o} + R_{2} + r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}R_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}R_{2}s^{3} + C_{1}C_{L}L_{1}R_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}L_{1}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{2}C_{L}L_{1}R_{2}r_{o}s^{3} + C_{2}C_{L}L_{1}R_{2}r_{o}s^{2} + C_{2}L_{2}r_{o}s + C_{L}L_{1}R_{2}r_{o}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}s^{2} + C_{L}L_{1}R_{2}r_{o}s^{2} + C_{L}L_{
10.693 INVALID-ORDER-693 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)
H(s) = \frac{R_L \left( C_1 - C_2 C_2 L_1 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^3 + C_
10.694 INVALID-ORDER-694 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{1}L_{1}R_{1}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}r_{o}s^{4}+C_{1}C_{2}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}
10.695 INVALID-ORDER-695 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_{L}L_{L}s^{2}+1\right)\left(C_{1}L_{1}R_{1}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}R_{2}r_{o}s+R_{2}g_{m}r_{o}+R_{2}+r_{o}\right)}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5}+C_{1}C_{2}L_{L}R_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}R_{2}g_{m}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{1}R_{2}s^{3}+C_{1}C_{L}L_{1}R_{1}R_{2}s^{3}+C_{1}C_{L}L_{1}R_{1}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{1}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L_{1}R_{2}r_{o}s^{3}+C_{2}C_{L}L
10.696 INVALID-ORDER-696 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)
H(s) = \frac{L_L s \left( \frac{L_L s}{C_1 C_2 C_L L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L R_1 r_o s^4 + C
10.697 INVALID-ORDER-697 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)
H(s) = \frac{\left(C_L L_L s^2 + C_L R_L s + 1\right) \left(C_1 L_1 R_1 s^2 + C_L R_L s + 1\right) \left(C_1 L_1 R_1 s^2 + C_2 R_L R_2 r_0 s^3 + C_1 C_L L_1 R_1 R_2 r_0 s^3 + C_1 C_L L_1 R_2 r_0 s^3 + C_1 C_L L_1
10.698 INVALID-ORDER-698 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_I} + \frac{1}{L_I s}}\right)
                                               \overline{C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}R_{2}R_{L}r_{o}s^{5} + C_{1}C_{2}L_{1}L_{L}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{L}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{1}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{1}R_{2}R
```

 $H(s) = \frac{1}{C_1 C_2 C_I L_1 L_I R_1 R_2 r_o s^5 + C_1 C_2 C_I L_1 L_I R_2 R_L r_o s^5 + C_1 C_2 L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^3 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 R_1 R_2 r_o s^4 + C_1$ 

**10.699** INVALID-ORDER-699  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$ 

10.702 INVALID-ORDER-702  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{1}L_{1}R_{1}s^{2} + L_{1}s + R_{1}\right)\left(C_{2}R_{2}g_{m}r_{o}s + C_{2}R_{2}s + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}g_{m}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{1}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{2}r_{o}s$$

10.703 INVALID-ORDER-703  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$ 

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_1 R_L r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_1 R_1 R_2 s^3 + C_1 C_2 L_1 R_2 R_L s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2$$

10.704 INVALID-ORDER-704  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}R_{L}s+1\right)\left(C_{1}L_{1}R_{1}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}R_{2}g_{m}r_{o}s^{2}+C_{1}C_{2}L_{1}R_{1}R_{2}s^{4}+C_{1}C_{2}L_{1}R_{1}r_{o}s^{4}+C_{1}C_{2}L_{1}R_{2}r_{o}s^{4}+$$

10.705 INVALID-ORDER-705  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{\left(C_{L}L_{L}s^{2} + 1\right)\left(C_{1}L_{1}R_{1}s^{2} + L_{1}s + R_{1}\right)\left(C_{2}R_{2}g_{m}r_{c}s^{2} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}s^{5} + C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{1}R_{2}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}R_{1}$$

10.706 INVALID-ORDER-706  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$ 

$$H(s) = \frac{1}{C_1C_2C_LL_1L_LR_1R_2g_mr_os^5 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2C_LL_1L_LR_2r_os^5 + C_1C_2L_1L_LR_2s^4 + C_1C_2L_1L_Lr_os^4 + C_1C_2L_1R_1R_2g_mr_os^3 + C_1C_2L_1R_1r_os^3 + C_1C_2L$$

10.707 INVALID-ORDER-707  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$ 

$$H(s) = \frac{(C_{I})^{2}}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}g_{m}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{L}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{L}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{1}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{1}R_{L}r_{o}$$

- 10.708 INVALID-ORDER-708  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_L R_1 R_2 g_m r_o s^4 + C_1 C_2 L_1 L_L R_1 R_2 s^4 + C_1 C_2 L_1 L_L R_1 R_2 r_o s^4 + C_1 C_$
- **10.709** INVALID-ORDER-709  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}R_{2}g_{m}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}R_{2}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}L_{1}L_{L}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{1}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{1}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{1}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{1}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{1}R_{2}$
- 10.710 INVALID-ORDER-710  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_2 R_L g_m r_o s^4 + C_1 C_2 C_L R_2 R_L g_m r_o$
- 10.711 INVALID-ORDER-711  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$
- $H(s) = \frac{R_L \left( C_1 L_1 R_1 s^2 + L_1 s + R_1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 L_2 R_1 g_m r_o s^4 + C_1 C_2 L_1 L_2 R_1 s^4 + C_1 C_2 L_1 L_2 r_o s^4 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^3 + C_2 L_1 L_2 s^3 + C_2 L_1 R_1 r_o s^3 + C_2 L_2 R_1 g_m r_o s^3 + C_2 L_2 R_2 g_$
- 10.712 INVALID-ORDER-712  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
- $H(s) = \frac{\left(C_{1}L_{1}R_{1}s^{2} + L_{1}s + R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2} + C_{2}L_{2}s^{2} + C_{2}r_{o}s + g_{m}r_{o} + 1\right)}{C_{1}C_{2}C_{L}L_{1}L_{2}R_{1}g_{m}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{2}s^{4} + C_{1}C_{2}L_{1}L_{2}s^{4} + C_{1}C_{2}L_{1}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}L_{2}g_{m}r_{o}s^{4} + C_{2}C_{L}L_{1}L_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}s^{4} + C_{2}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}R_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}s^{4} + C_{2}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}R_{1}s^{3} + C_{1}C_{L}L_{1}L_{2}s^{4} + C_{2}C_{L}L_{1}L_{2}s^{4} + C$
- 10.713 INVALID-ORDER-713  $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1} + R_1, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls+1}\right)$
- $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{2}R_{1}R_{L}g_{m}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{2}R_{1}R_{L}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{2}R_{L}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}R_{1}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{2}R_{1}s^{4} + C_{1}C_{2}L_{1}L_{2}R_{L}s^{4} + C_{1}C_{2}L_{1}L_{2}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{2}R_{L}r_{o}s^{4} + C_{$
- 10.714 INVALID-ORDER-714  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{\left(C_L R_L s + 1\right) \left(C_1 L_1 R_1 s^2 + L_1 s + R_1\right) \left(C_2 L_2 g_m r_o s^2 + C_1 C_2 C_L L_1 L_2 R_1 s^3 + C_1 C_L L_1 R_1$
- 10.715 INVALID-ORDER-715  $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1} + R_1, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$
- $H(s) = \frac{\left(C_{L}L_{L}s^{2}+1\right)\left(C_{1}L_{R}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}\right)\left(C_{2}L_{2}L_{1}s+R_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}s+R_{1}\right)\left(C_{2}L_{2}g_{m}r_{o}s^{2}+L_{1}s+R_{1}$

- 10.716 INVALID-ORDER-716  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 L_1 L_2 L_L r_o s^5 + C_1 C_2 L_1 L_2 L_L r_o s^5 + C_1 C_2 L_1 L_2 R_1 g_m r_o s^4 + C_1 C_2 L_1 L_2 R_1 s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 R_1 r_o s^4 +$
- **10.717** INVALID-ORDER-717  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{(C_L L_L L_S + C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 r_o s^5 + C_1 C_2 C_L L_1 L_1 r_o s^5 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 L_1 L_2 s^4 + C_1 C_2 L_1 L_2 s^4 + C_1 C_2 L_1 L_2 r_o s^3 + C_1 C_L L_1 L_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 r_o s^$
- 10.718 INVALID-ORDER-718  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_Lg_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1R_Ls^6 + C_1C_2C_LL_1L_2L_LR_1r_os^6 + C_1C_2L_1L_2L_LR_1g_mr_os^5 + C_1C_2L_1L_2L_LR_1s^5 + C_1C_2L_1L_2L_RR_1s^5 + C_1C_2L_2L_2L_2R_1s^5 + C_1C_2L_2L_2R_1s^5 + C_1C_2L_2L_2R_1s^5 + C_1C_2L_2L_2R_1s^5 + C_1C_2L_2L_2R_1s^5 + C_1C_2L_2R_1s^5 + C_1C_2L_2R_1s^5 + C_1C_2L_2R_1s^5 + C_1C_2L_2R_1s^5 + C_1C_2L_2R_1s^5 + C_1C_2L_2R_1s^5 + C_1C_2L_2R$
- 10.719 INVALID-ORDER-719  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2L_1L_2L_Ls^5 + C_1C_2L_1L_2R_1s^4 + C$
- 10.720 INVALID-ORDER-720  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \ L_2 s + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \infty, \ \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L R_1 R_L$
- 10.721 INVALID-ORDER-721  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$
- $H(s) = \frac{R_L \left( C_1 L_1 R_1 s^2 + L_1 s + R_1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 R_2 r_o s^2 + C_2 L_2 R_2 r_o s^3 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^3 + C_1 C_2 L_1 R_2 r_o$
- 10.722 INVALID-ORDER-722  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
- $H(s) = \frac{\left(C_{1}L_{1}R_{1}s^{2} + C_{1}C_{2}C_{L}L_{1}L_{2}R_{1}g_{m}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}g_{m}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{2}s^{3} + C_{1}C_{2}L_{1}R_{2}s^{3} + C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{4} + C_{1}C_{2}L_{L}L_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{L}L_{1}R_{2}s^{4} + C_{1}C_{2}L_{1}L_{2}s^{4} + C_{1}C_{2}L_{1}R_{2}s^{3} + C_{1}C_{L}L_{1}R_{1}g_{m}r_{o}s^{3} + C_{1}C_{L}L_{1}R_{1}g$
- 10.723 INVALID-ORDER-723  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_1 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_1 g_m r_o s^4 + C_1 C_2 L_$

- 10.724 INVALID-ORDER-724  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_2 r_o s^4 + C_1 C_$
- 10.725 INVALID-ORDER-725  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_2 s^5 + C_1 C_2 C_L L_1 L_1 R_2 s^5 + C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 s^4 + C_1 C_2 C_L L_1 R_2 r_o s^4 + C_1 C_$
- 10.726 INVALID-ORDER-726  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 L_1 L_2 L_L r_o s^6 + C_1 C_2 L_1 L_2 R_1 g_m r_o s^6 + C_1 C_2 L_1 L_$
- 10.727 INVALID-ORDER-727  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 R_2 s^5 + C_1 C_2 C_L L_$
- 10.728 INVALID-ORDER-728  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \ L_2 s + R_2 + \frac{1}{C_2 s}, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_L R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 R_L s^5 + C_$
- 10.729 INVALID-ORDER-729  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1s^6 + C_1C_2C_LL_1L_2L_LR_2s^6 + C_1C_2C_LL_1L_LR_1R_2g_mr_os^5 + C_1C_2C_LL_1L_LR_1R_2s^5 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2C_LL_1L_1R_1r_os^5 + C_1C_2C_LL_1R_1r_os^5 + C_1C_2C_LR_1r_os^5 + C_1C_2C_LR_1r_os^5$
- 10.730 INVALID-ORDER-730  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L R_1 R_2 g_m r_o s^5 + C_1 C_2 R_1 R_$
- 10.731 INVALID-ORDER-731  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)$

- 10.732 INVALID-ORDER-732  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 L_1 L_2 R_2 s^4 + C_1 C_2 L_1 L_2 R_2 s^4 + C_1 C_L L_1 L_2 R_1 g_m r_o s^4 + C_1 C_L L_1 L_2 R_1 s^4 + C_1 C_L L_1 L_2$
- 10.733 INVALID-ORDER-733  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 R_1 R_2 g_m r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 s^4 + C_1 C_2 L_1 L_2 R_1 R_2 r_o s^4 + C_1 C_$
- **10.734** INVALID-ORDER-734  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 L_1 L_2 R_2$
- 10.735 INVALID-ORDER-735  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_2R_1R_2g_mr_os^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_2r_os^5 + C_1C_2L_1L_2R_2s^4 + C_1C_2L_2L_2R_2s^4 + C_1C_2L_2L_2R_2s^4 + C_1C_2L_2L_2R_2s^4 + C_1C_2L_2L_2R_2s^4 + C_1C_2L_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4 + C_1C_2L_2R_2s^4$
- 10.736 INVALID-ORDER-736  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_$
- 10.737 INVALID-ORDER-737  $Z(s) = \left(\frac{L_1s}{C_1L_1s^2+1} + R_1, \frac{L_2s}{C_2L_2s^2+1} + R_2, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_Rs^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_2R_1R_2g_mr_os^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_2r_os^5 + C_1C$
- 10.738 INVALID-ORDER-738  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 R_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 L_1 L_2 L_L R_1 R_2 s^5 + C_1 C_2 L_1 L_2 L_L R_1 R_2 s^5 + C_1 C_2 L_1 L_2 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^5 + C_1 C_2 L_1 L_2 L_$
- 10.739 INVALID-ORDER-739  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1 C_2 C_1 L_1 L_2 L_1 R_1 R_2 a_m r_o s^6 + C_1 C_2 C_1 L_1 L_2 L_1 R_1 R_2 s^6 + C_1 C_2 C_1 L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_1 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 C_1 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 C_1 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o$

- 10.740 INVALID-ORDER-740  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{L_2 s}{C_2 L_2 s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 C_$
- 10.741 INVALID-ORDER-741  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L\right)$
- $H(s) = \frac{R_L \left( C_1 L_1 R_1 s^2 + L_1 s + R_1 \right)}{C_1 C_2 L_1 L_2 R_1 R_2 g_m r_o s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 L_1 R_1 R_2 g_m r_o s^2 + C_1 L_1 R_1 R_2 s^2 + C_1 L_1 R_1 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 R_2 r_o s^$
- 10.742 INVALID-ORDER-742  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2R_1R_2g_mr_os^5 + C_1C_2C_LL_1L_2R_1R_2s^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_2r_os^5 + C_1C_2C_LL_1R_1R_2r_os^4 + C_1C_2L_1L_2R_2s^4 + C_1C_2L_1L_2R_2s^4 + C_1C_2L_1L_2R_2s^3 + C_1C_LL_1R_1R_2s^3 + C$
- 10.743 INVALID-ORDER-743  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 g_m r_o s^4 + C_$
- 10.744 INVALID-ORDER-744  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 R_2 r_o s^5 + C_1$
- **10.745** INVALID-ORDER-745  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 L_$
- 10.746 INVALID-ORDER-746  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1r_os^6 + C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2L_1L_2L_LR_2r_os^6 + C_1C_2L_1L_2L_Rr_os^6 + C_1C_2L_Lr_os^6 + C_1C_2L_Lr_os$
- **10.747** INVALID-ORDER-747  $Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_2s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_2R_1R_2g_mr_os^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_2r_os^5 + C$

```
10.748 INVALID-ORDER-748 Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)
```

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2R_Lg_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1R_2R_Ls^6 + C_1C_2C_LL_1L_2L_LR_1R_Lr_os^6 + C_1C_2C_LL_1L_2L_LR_1R_2R_Lr_os^6 + C_1C_2C_LL_1L_2L_LR_1R_2R_Lr_os^6 + C_1C_2L_1L_2L_LR_1R_2R_Lr_os^6 + C_1C_2L_1L_2L_2R_1R_2R_Lr_os^6 + C_1C_2L_1L_2L_2R_1R_2R_Lr_os^6 + C_1C_2L_1L_2L_2R_1R_2R_Lr_os^6 + C_1C_2L_1L_2L_2R_1R_2R_Lr_os^6 + C_1C_2L_2L_2R_1R_2R_Lr_os^6 + C_1C_2L_2R_1R_2R_Lr_os^6 + C_1C_2R_1R_2R_Lr_os^6 + C_1C_2R_1R_2R$ 

10.749 INVALID-ORDER-749 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1r_os^6 + C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2C_LL_1L_2L_Rr_os^6 + C_1C_2C_LL_1L_2L_Rr_os^6$ 

10.750 INVALID-ORDER-750 
$$Z(s) = \left(\frac{L_1 s}{C_1 L_1 s^2 + 1} + R_1, \frac{R_2 \left(L_2 s + \frac{1}{C_2 s}\right)}{L_2 s + R_2 + \frac{1}{C_2 s}}, \infty, \infty, \infty, \frac{R_L \left(L_L s + \frac{1}{C_L s}\right)}{L_L s + R_L + \frac{1}{C_L s}}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 C_$ 

**10.751** INVALID-ORDER-751 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 R_1 R_2 g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 C_L L_1 R_2 r_o s^3 + C_1 C_L R_1 R_2 r_o s^2 + C_1 L_1 r_o s^2 + C_1 L_1 r_o s^2 + C_1 R_1 r_o s + C_L R_1 R_2 g_m r_o s + C_L R_1 R_2 s + C_L R_1 r_o s + C_L$ 

10.752 INVALID-ORDER-752 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$R_1R_L\left(C_1L_1s^2+1\right)\left(R_2g_mr_o+R_2+r_o\right)$$

 $H(s) = \frac{R_1 R_L \left( C_1 L_1 s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 R_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 R_L r_o s^3 + C_1 C_L R_$ 

**10.753** INVALID-ORDER-753 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_L R_L s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 R_1 R_2 g_m r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 C_L L_1 R_2 r_o s^3 +$$

**10.754** INVALID-ORDER-754  $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2, \infty, \infty, \infty, L_L s + \frac{1}{C_L s}\right)$ 

$$R_1 (C_1 L_1 s^2 + 1) (C_L L_L s^2 + 1) (R_2 q_m r_o + R_2 + r_o)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_L L_L s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 L_L r_o s^4 + C_1 C_L L_1 R_1 R_2 g_m r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 C_L L_1 R_2 r_o s^3$ 

10.755 INVALID-ORDER-755 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$L_L R_1 s \left( C_1 L_1 s^2 + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)$$

 $H(s) = \frac{L_L R_1 s \left(C_1 L_1 s^2 + 1\right) \left(R_2 g_m r_o + R_2 + r_o\right)}{C_1 C_L L_1 L_L R_1 R_2 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 R_1 r_o s^4 + C_1 C_L R_1 r_o s^4 + C_1 C_$ 

**10.756** INVALID-ORDER-756 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_L L_L s^2 + C_L R_L s + 1 \right) \left( R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_L L_1 L_L R_2 s^4 + C_1 C_L L_1 R_1 R_2 s^3 + C_1 C_L L_1 R_1 R_2 s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 C_L R_1 R_2 r_o$$

**10.757** INVALID-ORDER-757 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \ R_2, \ \infty, \ \infty, \ \infty, \ \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_2 R_L g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L r_o s^4 + C_1 L_$$

10.758 INVALID-ORDER-758 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_2 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 r_o s^4 + C_1 C_L R_1 R_2$$

10.759 INVALID-ORDER-759 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$$

$$H(s) = \frac{1}{C_1 C_L L_1 L_L R_1 R_2 g_m r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_2 r_o s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 R_2 R_L g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 R_L s^3 + C_$$

**10.760** INVALID-ORDER-760 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$$

10.761 INVALID-ORDER-761 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 L_1 r_o s^3 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 r_o s^3 + C_1 C_L R_1 r_o s^2 + C_1 L_1 s^2 + C_1 R_1 s + C_2 C_L R_1 r_o s^2 + C_2 r_o s + C_L R_1 g_m r_o s + C_L R_1 s + C_L r_o s + 1}$$

10.762 INVALID-ORDER-762 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{R_1 R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 R_1 R_L r_o s^4 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_2 L_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 C_L L_1 R_1 R_L s^3 + C_1 C_L L_1 R_1 R_L r_o s^3 + C_1 C_L R_1 R_L r_o s^3 + C_1 C_$$

**10.763** INVALID-ORDER-763 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_L R_L s + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_L r_o s^3 + C_1 C_2 L_1 r_o s^3 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L L_1 R_L s^3 + C_1 C_L R_1 R_L s^2 + C_1 C_L R_1 r_o s^2 + C_1 L_1 s^2 + C_1 R_1 r_o s^2 + C_2 C_L R_$$

10.764 INVALID-ORDER-764 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$$

$$R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_L L_L s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_L L_L s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 L_1 r_o s^3 + C_1 C_L L_1 L_L s^4 + C_1 C_L L_1 R_1 g_m r_o s^3 + C_1 C_L L_1 R_1 s^$ 

10.765 INVALID-ORDER-765 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$$

$$L_L R_1 s \left( C_1 L_1 s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right)$$

 $H(s) = \frac{L_L R_1 s \left(C_1 L_1 s^2 + 1\right) \left(C_2 r_o s + g_m r_o + 1\right)}{C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 L_1 L_L r_o s^4 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_2 L_L R_1 r_o s^4 + C_1 C_L L_1 L_L R_1 s^4 + C_1 C_L L_1 L_L R_1 r_o s^4 + C_1 L_1 R_$ 

**10.766** INVALID-ORDER-766 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, L_L s + R_L + \frac{1}{C_L s}\right)$$

$$R_1 (C_1 L_1 s^2 + 1) (C_2 r_o s + g_m r_o + 1) (C_L L_L s^2 + C_L R_L s + 1)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_2 r_o s + g_m r_o + 1 \right) \left( C_L L_L s^2 + C_L R_L s + 1 \right)}{C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 L_1 R_1 r_o s^4 + C_1$ 

10.767 INVALID-ORDER-767 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s + \frac{1}{R_L} + \frac{1}{L_L s}}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_L r_o s^5 + C_1 C_2 L_1 L_L R_1 r_o s^4 + C_1 C_2 L_1 L_L R_1 r_o s^3 + C_1 C_2 L_L R_1 R_L r_o s^3 + C_1 C_L L_L L_L R_1 R_L r_o s^4 + C_1 C_L L_L L_L R_1 R_L r_o s^4 + C_1 C_L L_L L_L R_1 R_L r_o s^4 + C_1 C_L L_L L_L R_1 R_L r_o s^4 + C_1 C_L L_L L_L R_1 R_L r_o s^4 + C_1 C_L L_L L_L R_1 R_L r_o s^4 + C_1 C_L R_1 R_L r_o s^4 + C_$ 

10.768 INVALID-ORDER-768 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1} + R_L\right)$$

$$R_1$$
 ( $C_1$ 

 $H(s) = \frac{R_1 \left( C_1 + C_2 C_2 L_1 L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_2 L_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 R_1 R_2 r_o s^3 + C_1 C_2 L_2 L_2 R_1 R_2 r_o s^4 + C_1 C_2 L_2 L_2 R_2 r_o s^4 + C_1 C_2 L_2 L_2 R_2 r_o s^4 + C_1 C_2 L_2 R_2 R_2 r_o s^4 + C_1 C_2 R_2 R_2 R_2 r_o s^4 +$ 

10.769 INVALID-ORDER-769 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{1}{C_2s}, \infty, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$$

$$H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}r_{o}s^{5} + C_{1}C_{2}L_{L}L_{1}R_{1}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{L}R_{1}R_{L}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{1}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{1}L_{L}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{1}R_{1}r_{o}s^{4} + C_{1}C_{L}L_{$$

**10.770** INVALID-ORDER-770 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L\right)$$

$$R_1 R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)$$

 $H(s) = \frac{R_1 R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^2 + C_1 L_1 R_1 R_2 g_m r_o s^2 + C_1 L_1 R_1 r_o s^2 + C_1 L_1 R_2 r_o s^2$ 

10.771 INVALID-ORDER-771 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o + R_2 + r_o \right)}{C_1 C_2 C_L L_1 R_1 R_2 r_o s^4 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_L L_1 R_1 R_2 g_m r_o s^3 + C_1 C_L L_1 R_1 r_o s^3 + C_1 C_L L_1 R_2 r_o s^3 + C_1 C_L R_1 R_2 r_o s^$ 

10.772 INVALID-ORDER-772 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2}{C_2R_2s + 1}, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls + 1}\right)$$

 $H(s) = \frac{R_1 R_L \left( C_1 L_1 s^2 + 1 \right)}{C_1 C_2 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 R_L r_o s^3 + C_1 C_L L_1 R_1 R_2 R_L r_o s^3 + C_1 C_L R_1 R_2 R_L r_o s^3 + C_1 C_L R_1 R_2 R_L r_o s^3 + C_1 C_L R_$ 

10.773 INVALID-ORDER-773 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, \frac{R_2}{C_2 R_2 s + 1}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_L R_L s + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 r_o s^4 + C_1 C_2 C_L L_1 R_2 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^3 + C_1 C_L L_1 R_1 R_2 g_m r_o s^3 + C_1 C_L L_1 R_1 R_2 s^3 + C_1 C_L L_1 R_2 R_L s^3 +$ 

10.774 INVALID-ORDER-774 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2}{C_2R_2s + 1}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_L L_L s^2 + 1 \right) \left( C_2 R_2 r_o s + R_2 g_m r_o s^3 + C_1 C_2 L_L R_1 R_2 r_o s^4 + C_1 C_2 L_L R_1 R_2 r_o s^4 + C_1 C_2 L_L R_1 R_2 r_o s^4 + C_1 C_L L_L R_1 R_2 r_o s^4 +$ 

10.775 INVALID-ORDER-775 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2}{C_2R_2s + 1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$$

 $H(s) = \frac{L_L R_1 s \left(C_1 L_1 s^2 + C_1 C_2 L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 L_1 L_L R_2 r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L L_L L_L R_1 R_2 r_o s^4 + C_1 C_L R_1 R_2 r_o s$ 

10.776 INVALID-ORDER-776 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2}{C_2R_2s + 1}, \infty, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$$

 $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{2}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}C_{L}L_{1}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}L_{L}R_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{L}L_{1}R_{1}R_{2}r_{o}s$ 

10.777 INVALID-ORDER-777 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2}{C_2R_2s + 1}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$$

 $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}R_{2}R_{L}r_{o}s^{5} + C_{1}C_{2}L_{1}L_{L}R_{1}R_{2}r_{o}s^{4} + C_{1}C_{2}L_{1}L_{L}R_{2}R_{L}r_{o}s^{3} + C_{1}C_{2}L_{L}R_{1}R_{2}R_{L}r_{o}s^{3} + C_{1}C_{L}L_{L}L_{L}R_{1}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{L}R_{1}R_{2}R_{L}r_{o}s^{4} + C_{1}C_{L}L_{L}L_{L}R_{1}R_{L}r$ 

10.778 INVALID-ORDER-778 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2}{C_2R_2s + 1}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 R_L r_o s^5 + C_1 C_2 C_L L_L R_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 L_L R_2 r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^3 + C_1 C_2 L_L R_1 R_2 r_o s^3$ 

10.779 INVALID-ORDER-779 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2}{C_2R_2s + 1}, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_LR_1R_2r_os^5 + C_1C_2C_LL_1L_LR_2R_Lr_os^5 + C_1C_2C_LL_1R_1R_2R_Lr_os^4 + C_1C_2L_1R_1R_2R_Lr_os^4 + C_1C_2L_1R_2R_Lr_os^3 + C_1C_2L_1R_2R_Lr_os^3 + C_1C_2L_1L_LR_1R_2R_Lr_os^4 + C_1C_LL_1L_LR_1R_2R_Lr_os^4 + C_1C_LL_1L_1R_1R_2R_Lr_os^4 + C_1C_LL_1L_1R_1R_2R_Lr_os^4 + C_1C_LL_1R_1R_2R_Lr_os^4 + C$ 

10.780 INVALID-ORDER-780 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, R_L\right)$$

$$R_1 R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)$$

 $H(s) = \frac{R_1 R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_1 C_2 R_1 R_2 r_o s^3 + C_1 C_2 R_1 R_2 r_o s^2 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_2 s^2 + C_1 L_1 R_1 s^2 + C_1 L_1 R_2 s^2 + C_1 R_2 r_o s^2 + C_1 R_$ 

**10.781** INVALID-ORDER-781 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls}\right)$$

$$R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_2 R_2 g_m r_o s + C_2 R_2 s + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_2 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 + C_$ 

10.782 INVALID-ORDER-782 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_1 R_2 g_m r_o s^3 + C_1 C_$ 

10.783 INVALID-ORDER-783 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$$

$$R_1 \left( C_1 L_1 s^2 + 1 \right)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right)}{C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 s^4 + C_1 C_2 C_L L_1 R_2 r_o s^4 + C_1 C_2 C_L L_1 R_2$ 

10.784 INVALID-ORDER-784 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$$

$$R_1 \left( C_1 L_1 s^2 + 1 \right)$$

 $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right)}{C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4$ 

10.785 INVALID-ORDER-785 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, R_2 + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{L_L s}{C_L L_L s^2 + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_L L_L R_2 r_o s^4 + C_1 C_2 L_1 R_2 r_o s^4 + C_1 C_2 L_1 R_1 R_2 r_o s^4$$

**10.786** INVALID-ORDER-786 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_LR_2s^5 + C_1C_2C_LL_1L_Lr_os^5 + C_1C_2C_LL_1R_1R_2s^4 + C_1C_2C_LL_1R_1r_os^4 + C_1C_2C_LL_1R_2r_os^4 + C_1C_2C_LL_1R_2r$$

10.787 INVALID-ORDER-787 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_LR_1R_2R_Lg_mr_os^5 + C_1C_2C_LL_1L_LR_1R_2R_Ls^5 + C_1C_2C_LL_1L_LR_1R_Lr_os^5 + C_1C_2C_LL_1L_LR_1R_2R_Lr_os^5 + C_1C_2C_LL_1L_LR_1R_2R_Lr_os^5 + C_1C_2C_LL_1L_LR_1R_2R_Lr_os^5 + C_1C_2L_1L_LR_1R_2R_Lr_os^5 + C_1C_2L_1L_1R_1R_2R_Lr_os^5 + C_1C_2L_1L_1R_1R_2R_Lr_os^5 + C_1C_2L_1L_1R_1R_2R_Lr_os^5 + C_1C_2L$$

10.788 INVALID-ORDER-788 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 r_o s^5 + C_1 C_2 C_L r_$$

10.789 INVALID-ORDER-789 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_L R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_2 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 r_o s^5 + C_1 C_2 C_L L_1 R_$$

**10.790** INVALID-ORDER-790 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{R_1 R_L \left( C_1 L_1 s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 L_1 L_2 R_1 g_m r_o s^4 + C_1 C_2 L_1 L_2 R_1 s^4 + C_1 C_2 L_1 L_2 r_o s^4 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_2 L_2 R_1 R_L s^3 + C_1 C_2 L_2 R_1 R_L r_o s^2 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 g_m r_o s^2 + C_1 L_1 R_1 s^2 + C_1 L_1$$

**10.791** INVALID-ORDER-791 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( C_2 L_2 g_m r_o s^2 + C_2 L_2 s^2 + C_2 r_o s + g_m r_o + 1 \right)}{C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 r_o s^5 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 L_1 L_2 s^4 + C_1 C_2 L_1 R_1 r_o s^4 + C_$$

10.792 INVALID-ORDER-792 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, \frac{R_L}{C_L R_L s + 1}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 R_1 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_1 g_m r_o s^4 + C_1 C_2 L_1 R_1 g_m r_o s^4 + C_1$$

**10.793** INVALID-ORDER-793 
$$Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, L_2 s + \frac{1}{C_2 s}, \infty, \infty, \infty, R_L + \frac{1}{C_L s}\right)$$

$$H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right)}{C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 r_o s^5 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_2 R_1 R_L s^4 + C_1 C_2 C_L L_2 R_1 R_L r_o s^4 + C_1 C_2 C_L L_$$

10.794 INVALID-ORDER-794 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{R_1 \left( C_1 L_1 s^2 + 1 \right) \left( c_1 C_2 C_L L_1 L_2 L_1 s^6 + C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 r_o s^5 + C_1 C_2 C_L L_1 L_1 r_o s^4 + C_1 C_2 C_L L_1 L_2 r_o s^4 + C_1 C_2 C_L L_1 L_$$

10.795 INVALID-ORDER-795 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1q_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2L_1L_2L_Ls^5 + C_1C_2L_1L_2R_1q_mr_os^4 + C_1C_2L_1L_2R_1s^4 + C_1C_2L_1L_2R_1s^6 + C_1C_2L_1L_2R_1r_os^6 + C_1C_2L_1L_2R_1r_os^5 + C_1C_2L_1L_2R_1r_os^5 + C_1C_2L_1L_2R_1q_mr_os^4 + C_1C_2L_1L_2R_1s^4 + C_1C_2L_1L_2R_1s^6 + C_1C_2L_1L_2R_1r_os^6 + C_1C_2L_1R_1r_os^6 + C_1C$$

- **10.796** INVALID-ORDER-796  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^4 + C_1 C_2 C_L L_2 R_1 r_o s^4 + C_1 C_2 C_$
- 10.797 INVALID-ORDER-797  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_L r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_L r_o s^5 + C_1 C_2 L_1 L_2 L_L R_1 R_L r_o s^5 + C_$
- 10.798 INVALID-ORDER-798  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_1 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_L s^5 + C_1 C_2 C_L L_2 L_L R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_2 R_1 r_o s^5 + C_1 C_2 C_L R_1 r_o s^5 + C_$
- 10.799 INVALID-ORDER-799  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$
- $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{1}g_{m}r_{o}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{1}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{1}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{1}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}R_{L}R_{0}s^{5} + C$
- **10.800** INVALID-ORDER-800  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, R_L\right)$
- $H(s) = \frac{R_1 R_L \left(C_1 L_1 s^2 + 1\right) \left(C_2 L_2 g_m r_o s^2 + C_1 C_2 L_1 L_2 R_1 s^4 + C_1 C_2 L_1 L_2 R_1 s^4 + C_1 C_2 L_1 L_2 R_2 s^4 + C_1 C_2 L_1 R_1 R_2 g_m r_o s^3 + C_1 C_2 L_1 R_1 r_o s^3 + C_1 C_2 L_1 R_2 r_o s^3 +$
- 10.801 INVALID-ORDER-801  $Z(s) = \left(\frac{R_1\left(L_1 s + \frac{1}{C_1 s}\right)}{L_1 s + R_1 + \frac{1}{C_1 s}}, L_2 s + R_2 + \frac{1}{C_2 s}, \infty, \infty, \frac{1}{C_L s}\right)$
- $H(s) = \frac{R_1 \left( C_1 L_1 s^2 + C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_2 r_o s^4 + C_1 C_2 C_L L_1 R_$
- **10.802** INVALID-ORDER-802  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_L r_o s^5 + C_1 C_2 C_L L_1 R_1 R_2 R_L g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 R_L s^4 + C_1 C_2 C_L L_1 R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^4 + C_1 C_2 C_L R_1 R_2 R_L r_o s^4 + C_1$
- **10.803** INVALID-ORDER-803  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 R_2 s^5 + C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_2 r_o s^4 + C_1 C_2 C_L L_1 R_2 r_o s^4 + C_1 C_2 C_L L_1 R_1 r_o s^4 + C_1 C_2 C_L L_1 R_2 r_o s^4 + C_1 C_$

**10.804** INVALID-ORDER-804 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 L_L R_2 s^5 + C_1 C_2 C_L L_1 R_1 R_2 g_m r_o s^4 + C_1 C_2 C_L L_1 R_1 R_2 s^4 + C_1 C_2 C_L L_1 R_2 r_2 s^4 + C_1 C_$$

10.805 INVALID-ORDER-805 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_LR_1R_2s^5 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2C_LL_1L_2L_1r_os^6 + C_1C_2C_LL_1L_1r_os^6 + C_1C_2C_LL_1r_os^6 + C_1C$$

**10.806** INVALID-ORDER-806 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L s^6 + C_1 C_2 C_L L_1 L_2 R_1 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 s^5 + C_1 C_2 C_L L_1 L_2 R_2 s^5 + C_1 C_2 C_L L_$$

10.807 INVALID-ORDER-807 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$$

$$H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{1}R_{L}g_{m}r_{o}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{1}R_{L}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}R_{2}R_{L}g_{m}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}R_{L}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{L}R_{1}R_{L}r_{o}s^{5$$

10.808 INVALID-ORDER-808 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1s^6 + C_1C_2C_LL_1L_2L_Lr_os^6 + C_1C_2C_LL_1L_LR_1r_os^5 + C_1C_2C_LL_1L_1R_1r_os^5 + C_1C_2C_LL_1R_1r_os^5 + C_1C_2C_LR_1r_os^5 + C$$

10.809 INVALID-ORDER-809 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, L_2s + R_2 + \frac{1}{C_2s}, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$$

$$H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 R_2 g_m r_o s^5 + C_1 C_2 C_L R_2 g_m$$

**10.810** INVALID-ORDER-810 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, R_L\right)$$

$$H(s) = \frac{1}{C_1C_2L_1L_2R_1R_2g_mr_os^4 + C_1C_2L_1L_2R_1R_2s^4 + C_1C_2L_1L_2R_1r_os^4 + C_1C_2L_1L_2R_2r_os^4 + C_1C_2L_1L_2R_2r_os^4 + C_1C_2L_1L_2R_1r_os^4 + C_1C_2L_1R_1r_os^4 + C_1C_2L_1L_2R_1r_os^4 + C_1C_2L_1L_2R$$

10.811 INVALID-ORDER-811 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_Ls}\right)$$

$$H(s) = \frac{1}{C_1C_2C_LL_1L_2R_1R_2q_mr_os^5 + C_1C_2C_LL_1L_2R_1R_2s^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_2r_os^5 + C_1C_2C_LL_2R_1R_2r_os^4 + C_1C_2L_1L_2R_2s^4 + C_1C_2L_1L_2R_2s^3 + C_1C_2L_2R_1r_os^3 + C_1C_LL_1L_2R_1q_mr_os^4 + C_1C_LL_1L_2R_1q_mr$$

- 10.812 INVALID-ORDER-812  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 R_L r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 g_m r_o s^4 + C_$
- **10.813** INVALID-ORDER-813  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_$
- 10.814 INVALID-ORDER-814  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_L R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_2 R_$
- 10.815 INVALID-ORDER-815  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2 r_o s^6 + C_1 C_2 L_1 L_2 L_1 R_2$
- **10.816** INVALID-ORDER-816  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$
- $H(s) = \frac{1}{C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}R_{2}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}L_{L}r_{o}s^{6} + C_{1}C_{2}C_{L}L_{1}L_{2}R_{1}R_{2}g_{m}r_{o}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{2}R_{1}R_{2}s^{5} + C_{1}C_{2}C_{L}L_{1}L_{2}R_{1}r_{o}s^{5} + C$
- 10.817 INVALID-ORDER-817  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 R_L g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 R_L s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 R_L r_o s^6 + C_1 C_2 C_L L_2 L_L R_1 R_2 R_L r_o s^6 + C_1 C_2 L_1 L_2 L_L R_1 R_2 R_L r_o s^6 + C_1$
- 10.818 INVALID-ORDER-818  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_2$
- 10.819 INVALID-ORDER-819  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{L_2s}{C_2L_2s^2 + 1} + R_2, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$
- $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2g_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1r_os^6 + C_1C_2C_LL_1L_2L_LR_2r_os^6 + C_1C_2C_LL_1L_2L_Rr_os^6 + C$

10.820 INVALID-ORDER-820 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty\right)$$

 $H(s) = \frac{R_1 R_L \left( C_1 + C_2 L_1 L_2 R_1 R_2 g_m r_o s^4 + C_1 C_2 L_1 L_2 R_1 R_2 s^4 + C_1 C_2 L_1 L_2 R_1 r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 L_2 R_2 r_o s^4 + C_1 C_2 L_1 R_2 R_2 r_o s^$ 

10.821 INVALID-ORDER-821 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{1}{C_Ls}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2R_1R_2g_mr_os^5 + C_1C_2C_LL_1L_2R_1R_2s^5 + C_1C_2C_LL_1L_2R_1r_os^5 + C_1C_2C_LL_1L_2R_2r_os^5 + C_1C_2C_LL_1R_1R_2r_os^4 + C_1C_2L_1L_2R_2s^4 + C_1C_2L_1L_2r_os^4 + C_1C_2L_1R_2r_os^4 + C$ 

10.822 INVALID-ORDER-822 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, \frac{R_L}{C_LR_Ls + 1}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2R_1R_2R_Lg_mr_os^5 + C_1C_2C_LL_1L_2R_1R_2R_Ls^5 + C_1C_2C_LL_1L_2R_1R_Lr_os^5 + C_1C_2C_LL_1R_1R_2R_Lr_os^4 + C_1C_2L_1L_2R_1R_2g_mr_os^4 + C_1C_2L_1L_2R_1R$ 

10.823 INVALID-ORDER-823 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, R_L + \frac{1}{C_Ls}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 R_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 R_$ 

10.824 INVALID-ORDER-824 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \infty, L_Ls + \frac{1}{C_Ls}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_0 s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_0 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_0 s^5 + C_1 C_2 C_L L_1 L_$ 

10.825 INVALID-ORDER-825 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 r_o s^6 + C_1 C_2 C_L L_1$ 

10.826 INVALID-ORDER-826 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, L_Ls + R_L + \frac{1}{C_Ls}\right)$$

 $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L r_o s^6 + C_1 C_2 C_L L_1 L_2 R_1 R_2 g_m r_o s^5 + C_1 C_2 C_L L_1 L_2 R_1 R_2 s^5 + C_1 C_2 C_L L_1 L_2 R_1 r_o s^5 + C_1 C_2 C_L L_1 L_$ 

10.827 INVALID-ORDER-827 
$$Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{1}{C_Ls + \frac{1}{R_L} + \frac{1}{L_Ls}}\right)$$

 $H(s) = \frac{1}{C_1C_2C_LL_1L_2L_LR_1R_2R_Lq_mr_os^6 + C_1C_2C_LL_1L_2L_LR_1R_2R_Ls^6 + C_1C_2C_LL_1L_2L_LR_1R_Lr_os^6 + C_1C_2C_LL_1L_2L_LR_1R_2R_Lr_os^6 + C_1C_2C_LL_1L_2L_LR_1R_2R_Lr_os^6 + C_1C_2C_LL_1L_2L_RR_1R_2R_Lr_os^6 + C_1C_2C_LL_1L_2L_RR$ 

- 10.828 INVALID-ORDER-828  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{L_Ls}{C_LL_Ls^2 + 1} + R_L\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_1 R_1 r_o s^6 + C_1 C_2 C_$
- 10.829 INVALID-ORDER-829  $Z(s) = \left(\frac{R_1\left(L_1s + \frac{1}{C_1s}\right)}{L_1s + R_1 + \frac{1}{C_1s}}, \frac{R_2\left(L_2s + \frac{1}{C_2s}\right)}{L_2s + R_2 + \frac{1}{C_2s}}, \infty, \infty, \infty, \frac{R_L\left(L_Ls + \frac{1}{C_Ls}\right)}{L_Ls + R_L + \frac{1}{C_Ls}}\right)$
- $H(s) = \frac{1}{C_1 C_2 C_L L_1 L_2 L_L R_1 R_2 g_m r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_1 r_o s^6 + C_1 C_2 C_L L_1 L_2 L_L R_2 r_o s^6 + C_1 C_2 C_L L_1 L_2 R_2 r_o s^6 + C_1 C_2 C_L L_1$