

## Lista 1 – Eletrônica Aplicada, Prof. Marcelo Perotoni

Capítulo 11 Boylestad, versão biblioteca UFABC em português

11.4 (a) 13.01dB (b) 13.01dB (c) 37dB

11.5  $G_{dBm}=43.97dBm$

11.6  $G_{dB}=12dB$

11.7  $G_{dB}=67.95dB$

11.8  $A_{vT}=998541$ ,  $A_{vTdB}=119.99dB$

11.9 (a) 69.82dB (b)  $G_v=82.83dB$  (c)  $Z_i=2K$  (d)  $V_{out}=1385.64$

11.11 (a)  $f_i=1950Hz$

11.12  $\theta=\text{atan}[1.95KHz/f]$

11.14  $A_v=-86.97$   $f_{LCC}=28.23Hz$  outros não mudam

11.15 (a) Usa análise simplificada, após o teste.  $r_e=24.48$  (b)  $A_{vmedias}=-72.91$  (c)  $Z_i=2.45K$  (d)  $A_{vs}=-54.68$   
(e)  $f_{LS}=103.4Hz$ ,  $f_{LC}=38.05Hz$ ,  $f_{LE}=235.79Hz$  (f) 235.79Hz

11.16 (a)  $r_e=6.93$  (b)  $A_{vmedias}=-264.24$  (c)  $Z_i=761.07$  (d)  $A_{vsmedias}=-147.76$  (e)  $f_{LS}=116.93Hz$ ,  $f_{LC}=20.67Hz$ ,  
 $f_{LE}=1.917kHz$

11.17 (a)  $r_e=30.23$  (b)  $A_{vmedias}=0.983$  (c)  $Z_i=21.13K$  (d)  $A_{vsmedias}=0.955$  (e)  $f_{LS}=71.92Hz$ ,  $f_{LC}=193.16Hz$   
(f) 193.16Hz

11.18 (a)  $r_e=9.45$  (b)  $A_{vmedias}=205.1$  (c)  $Z_i=9.38$  (d)  $A_{vsmedias}=17.59$  (e)  $f_{LS}=145.5Hz$ ,  $f_{LC}=1.989Hz$   
(f) 145.5Hz

11.19 (a)  $V_{GSq}=-2.45$   $I_{DSq}=2.1mA$  (b)  $g_{m0}=2mS$   $g_m=1.18mS$  (c)  $A_{vmedias}=-2$  (d)  $Z_i=1M$  (e)  $A_{vs}=-2$  (f)  
 $f_{LG}=1.59Hz$   $f_{LC}=4.91Hz$   $f_{LS}=32Hz$  (g) 32Hz

11.20 (a) Bias não muda (b)  $g_m$  não muda (c)  $A_{vmedias}=-1.971$  (d)  $Z_i$  não muda (e)  $A_{vsmedias}=-1.969$  (f)  
 $f_{LG}$  não muda  $f_{LC}=4.97Hz$   $f_{LS}=31.88Hz$

11.21 (a)  $V_{GSq}=-2.55$   $I_{dq}=3.3mA$  (b)  $g_{m0}=3.33mS$   $g_m=1.91mS$  (c)  $A_{vmedias}=-4.39$  (d)  $Z_i=51.94K$  (e)  
 $A_{vsmedias}=-4.27$  (f)  $f_{LG}=2.98Hz$ ,  $f_{LC}=2.46Hz$ ,  $f_{LS}=41Hz$  (f) 41Hz

11.22 (a)  $f_{Hi}=298kHz$   $f_{Ho}=2.73MHz$  (b)  $f_{\beta}=895.56KHz$   $f_T=107.47MHz$

11.23 (a)  $f_{Hi}=293kHz$   $f_{Ho}=3.22MHz$  (b)  $f_{\beta}=8.03MHz$   $f_T=883.3MHz$

11.24 (a)  $f_{Hi}=2.87MHz$   $f_{Ho}=127.72MHz$  (b)  $f_{\beta}=1.05MHz$   $f_T=105MHz$

11.25 (a)  $f_{Hi}=584MHz$   $f_{Ho}=2.93MHz$  (b)  $f_{\beta}=5MHz$   $f_T=400.8MHz$

**11.26** (a)  $g_m=1.18\text{mS}$  (b)  $A_{v\text{medias}}=A_{vs}=-2$  (c)  $f_{Hi}=7.59\text{MHz}$   $f_{Ho}=7.82\text{MHz}$

**11.27** (a)  $g_m=1.91\text{mS}$  (b)  $A_{v\text{medias}}=-4.39$   $A_{vs}=-4.27$  (c)  $f_{Hi}=1.84\text{MHz}$   $f_{Ho}=3.68\text{MHz}$

**11.28**  $A_{vI}=80\text{dB}$

**11.29**  $f_2'=1.09\text{MHz}$

**11.30**  $f_1'=91.96\text{Hz}$

**11.31** (a) serie fourier normal pulso, apenas harmônicas ímpares (b)  $BW=500\text{KHz}$  (c)  $f_{LO}=3.53\text{KHz}$