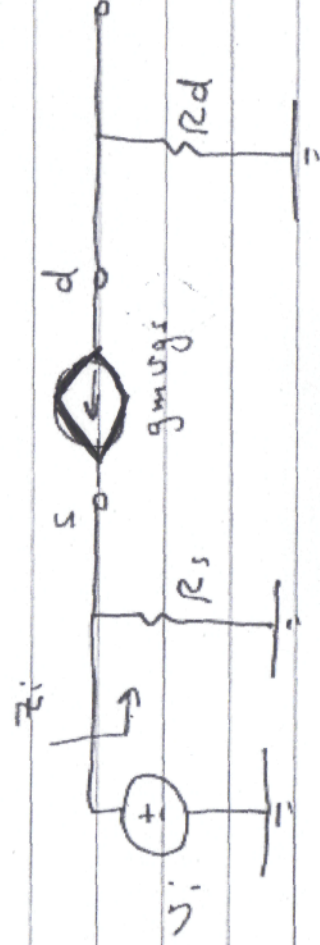
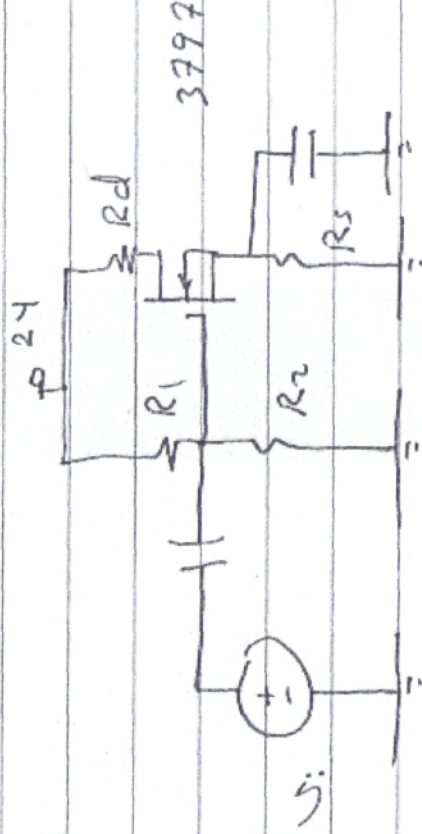


8.29 ac small signal Equivalent CRT



$$Z_i = R_s \parallel \frac{1}{g_m}$$

8.44



From Data sheet  $I_{DSS}(\text{typical}) = 2.9 \text{ mA}$   
 $g_m(\text{typical}) = 2.3 \text{ mS}$

$\therefore$  let  $I_{DS} = I_{DSS}(\text{typical}) = 2.9 \text{ mA}$

$\therefore V_{GS} = 0, V_G = V_S$

$$24 = V_{DS} + (R_D + R_S) I_{DS}$$

$$24 = 12 + (R_D + R_S) I_{DS}$$

$\therefore R_D + R_S = 4.177 \text{ K}$

$$|A_v| = g_m R_d = 9 \rightarrow R_d = \frac{9}{2.3} = 3.91 \text{ K}$$