

Two low-frequency small-signal device models around an NMOS device are shown in Figure 1 below (the DC sources/biasing have been removed). The device small-signal parameters are:  $g_m$  and  $r_{ds}$  (substrate bias effects and device capacitances can be ignored). Solve for the small-signal resistances,  $R_{diode}$ ,  $R_d$ ,  $R_s$ .

