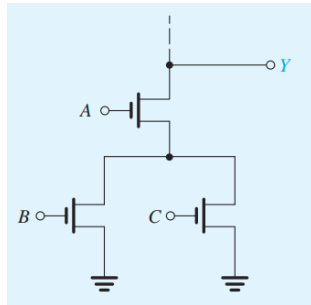9.1 Find the PUN that corresponds to the PDN shown in figure 1, and hence the complete CMOS logic circuit. What is the Boolean function realized?

9.2 Provide a CMOS logic gate circuit that realizes the function $Y = \bar{A}BC + A\bar{B}C + AB\bar{C}$ How many transistors are required? Explore the possibility of reducing the number of the transistors required.

9.3 The voltage-transfer characteristic of a particular logic inverter is modeled by three straight-line segments in the manner shown in fig 2. If $V_{IL} = 1.2\ V$, $V_{IH} = 1.3\ V$, $V_{OL} = 0.4\ V$ and $V_{OH} = 1.8\ V$, find:

(a) the noise margins

(b) The value of V_M

(C) the voltage gain in the transition region.