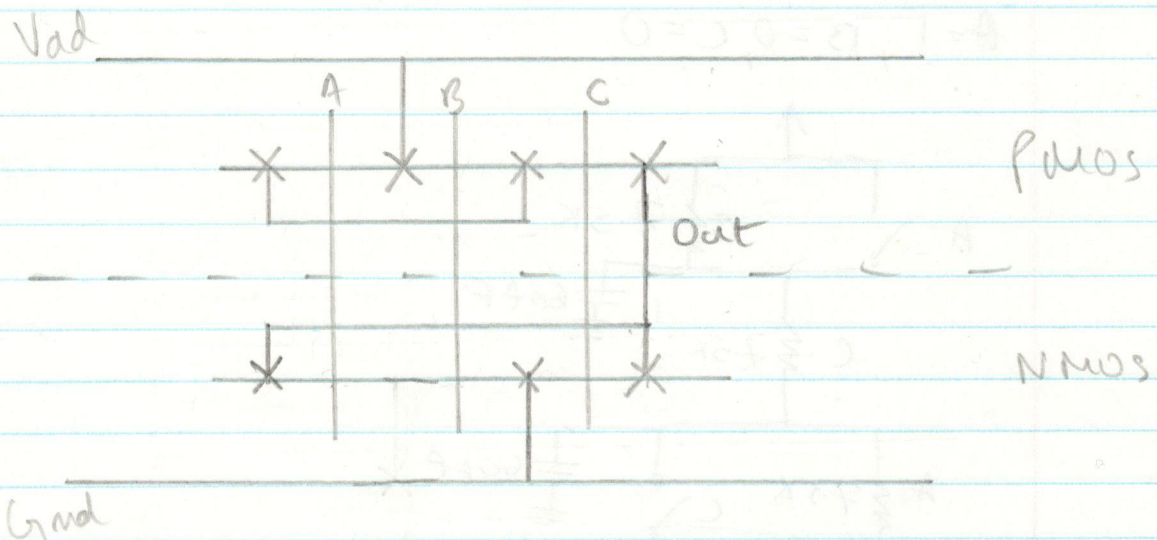


Q-2)



PMOS

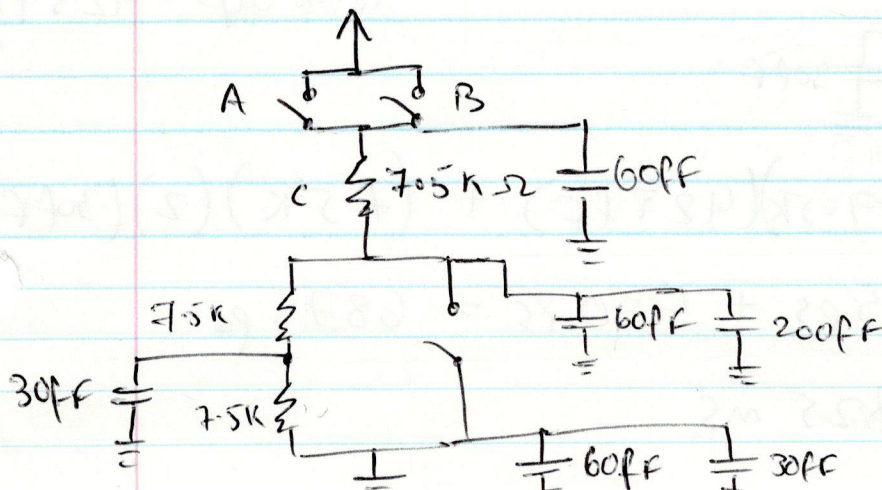
$$\frac{30 \text{ k}\Omega}{4} = 7.5 \text{ k}\Omega \quad ; \quad 15 \text{ fF} \times 4 = 60 \text{ fF}$$

NMOS

$$A \& B: \frac{15 \text{ k}\Omega}{2} = 7.5 \text{ k}\Omega \quad ; \quad 15 \text{ fF} \times 2 = 30 \text{ fF}$$

$$C: \frac{15 \text{ k}\Omega}{1} = 15 \text{ k}\Omega \quad ; \quad 15 \text{ fF} \times 1 = 15 \text{ fF}$$

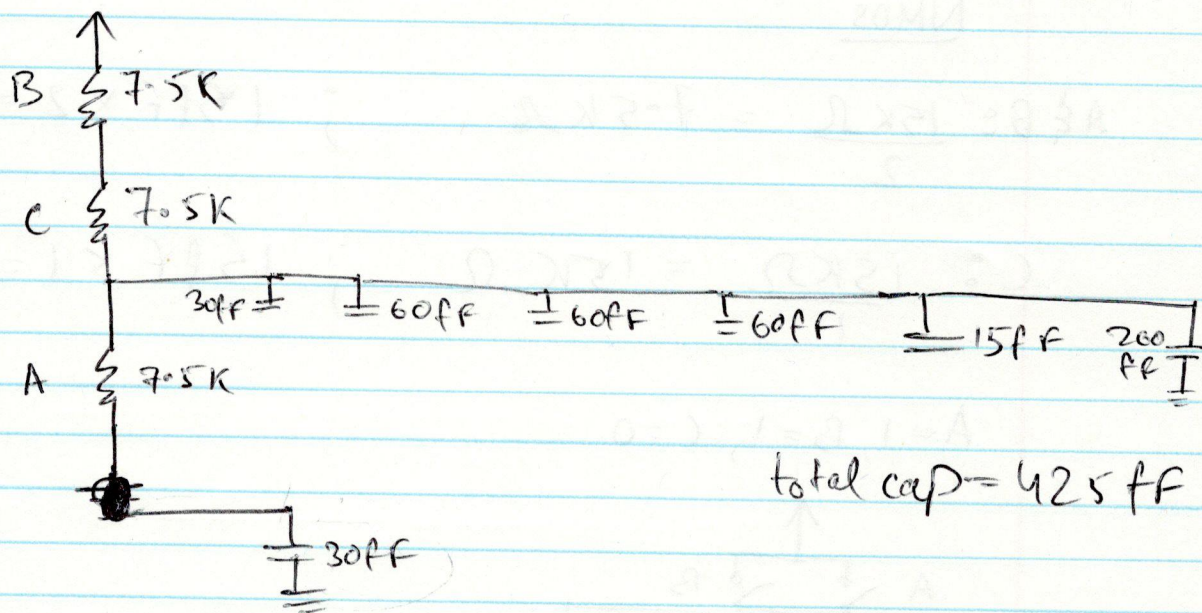
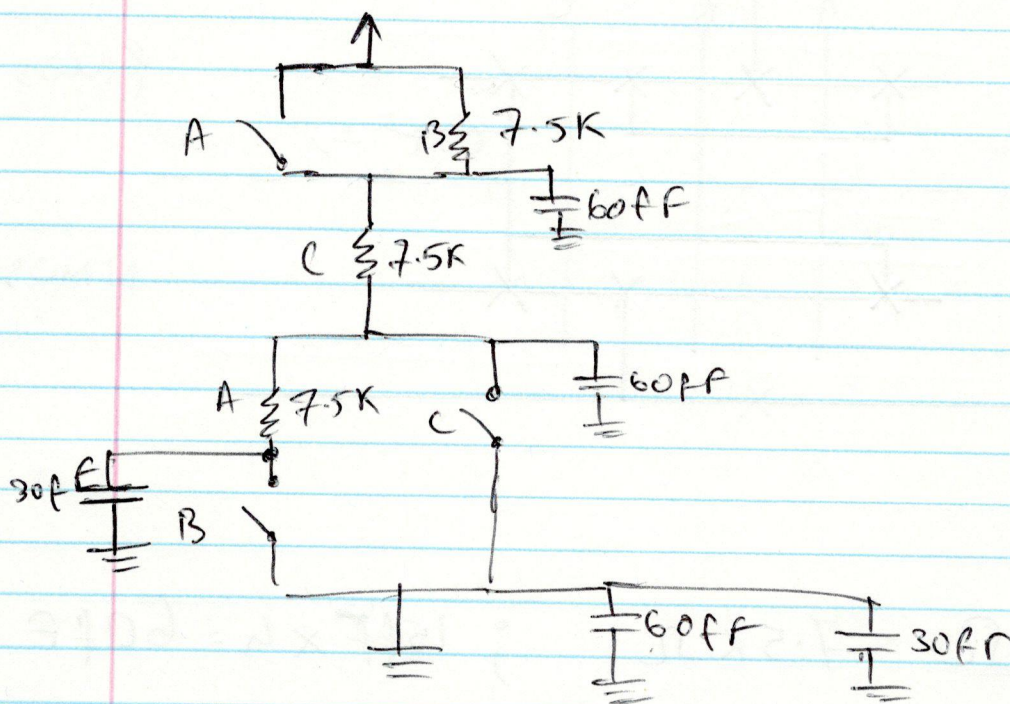
$$A=1, B=1, C=0$$





(4)

$$A=1, B=0, C=0$$



$$\text{total cap} = 425 \text{ fF}$$

$$\text{Delay} = (7.5 \text{ K} + 7.5 \text{ K})(425 \text{ fF}) + (7.5 \text{ K})(2)(30 \text{ fF})$$

$$\text{Delay} = 6375 \text{ ps} + 450 \text{ ps} = 6875 \text{ ps}$$

$$\text{Delay} = 6.875 \text{ ns}$$