

Static Logics Gates, AOIs, and Stick Diagrams

1. Convert the following logic expressions to CMOS AOI circuits and hand-draw the stick diagrams of the layouts. (100 points)

(a) $G = \bar{A}$

(b) $G = \overline{(A \cdot B)}$

(c) $G = \overline{(A + B)}$

(d) $G = A \cdot B$

(e) $G = \overline{(A + B) \cdot (C + D) \cdot E}$

(f) $G = \overline{(A \cdot B) + (C \cdot D)}$

(g) $G = \overline{(A \cdot B + C)} \cdot \bar{D}$

(h) $G = \overline{(A \cdot B)} + A \cdot B$