1. Draw the transistor-level schematic for the following Boolean functions.

(a) \( F = \bar{a}(b + c) + ab \)

(b) \( F = \bar{a} + b(c + \bar{d})(\bar{a} + bc + \bar{d}) \)

(c) \( F = a(\bar{c} + b(a + cd)) + \bar{a}(d + bc)d \)

(d) \( F = b(ab + e(\bar{b}(a + \bar{c}d) + a) + e) \)

2. Consider the following Boolean function: \( F = (\bar{c} + b)(ab + \bar{c}) + \bar{b}c \).

(a) Build the truth table for \( F \).

(b) Draw the transistor-level schematic.

3. For each pull-up/pull-down network below, give the Boolean expression and draw its pull-down/pull-up network.