ECE 150 Digital Logic Design, Fall 2023

Quiz 4, November 15th 2023

Problem 1 (10 pts).

Consider the common annode 4x4 LED matrix below, with logical variables (A,B,C,D) as row inputs and (a,b,c,d) as column inputs.

(a) For each time instance of the timing diagram below (t_1, t_2, t_3, t_4), list the LEDs which are ON. Give answers in (row, column) format (ex. (A,d)).
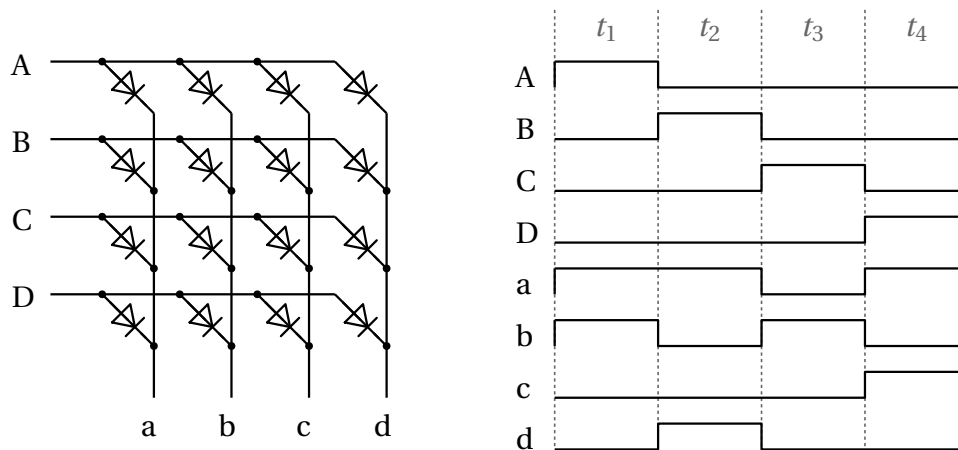

Figure 1: Left: 4x4 common anode LED matrix. Right: row/column timing diagram.

Solution.

t_1: (A,c), (A,d)

t_2: (B,b), (B,c)

t_3: (C,a), (C,c), (C,d)

t_4: (D,b), (D,d)