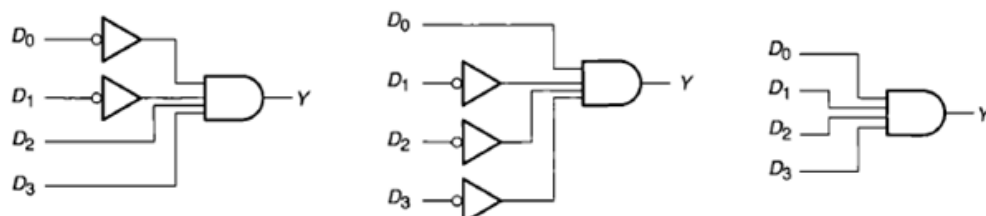


## 數位邏輯設計 Ch6 HW

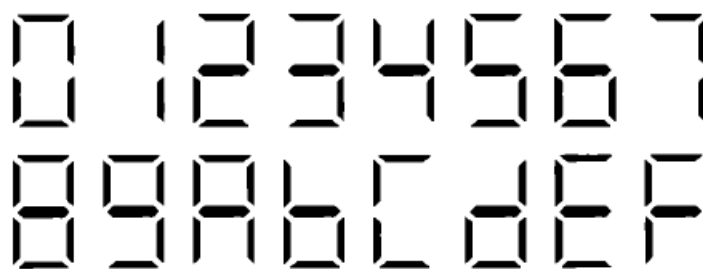
Problems:

- 6.1** When a HIGH is on the outputs of each of the decoding circuits shown in Figure 6.67, what is the binary code appearing at the inputs? Write the Boolean expression for each decoder output.



**FIGURE 6.67** Problem 6.1 Decoding Circuits

- 6.2** Draw the decoding circuit for each of the following Boolean expressions:
- $\bar{Y} = \bar{D}_3 D_2 \bar{D}_1 D_0$
  - $\bar{Y} = \bar{D}_3 \bar{D}_2 D_1 D_0$
- 6.7**
- Write a VHDL file for a 3-line-to-8-line decoder with active-LOW outputs and no enable. Use a selected signal assignment statement.
  - Write a list of simulation criteria for the decoder.
  - Use the simulation criteria to create a set of simulation waveforms for the decoder using the Quartus II simulation tool.
- 6.10** Write a truth table for a hexadecimal-to-seven-segment decoder for a common anode display. Use the digit patterns of Figure 6.19 as a model.



**FIGURE 6.19** Example 6.7: Hexadecimal Digit Display Format

- 6.46** The following data are transmitted in a serial communication system ( $P$  is the parity bit). What parity is being used in each case?
- $ABCDEFGHP = 010000101$
  - $ABCDEFGHP = 011000101$
  - $ABCDP = 01101$