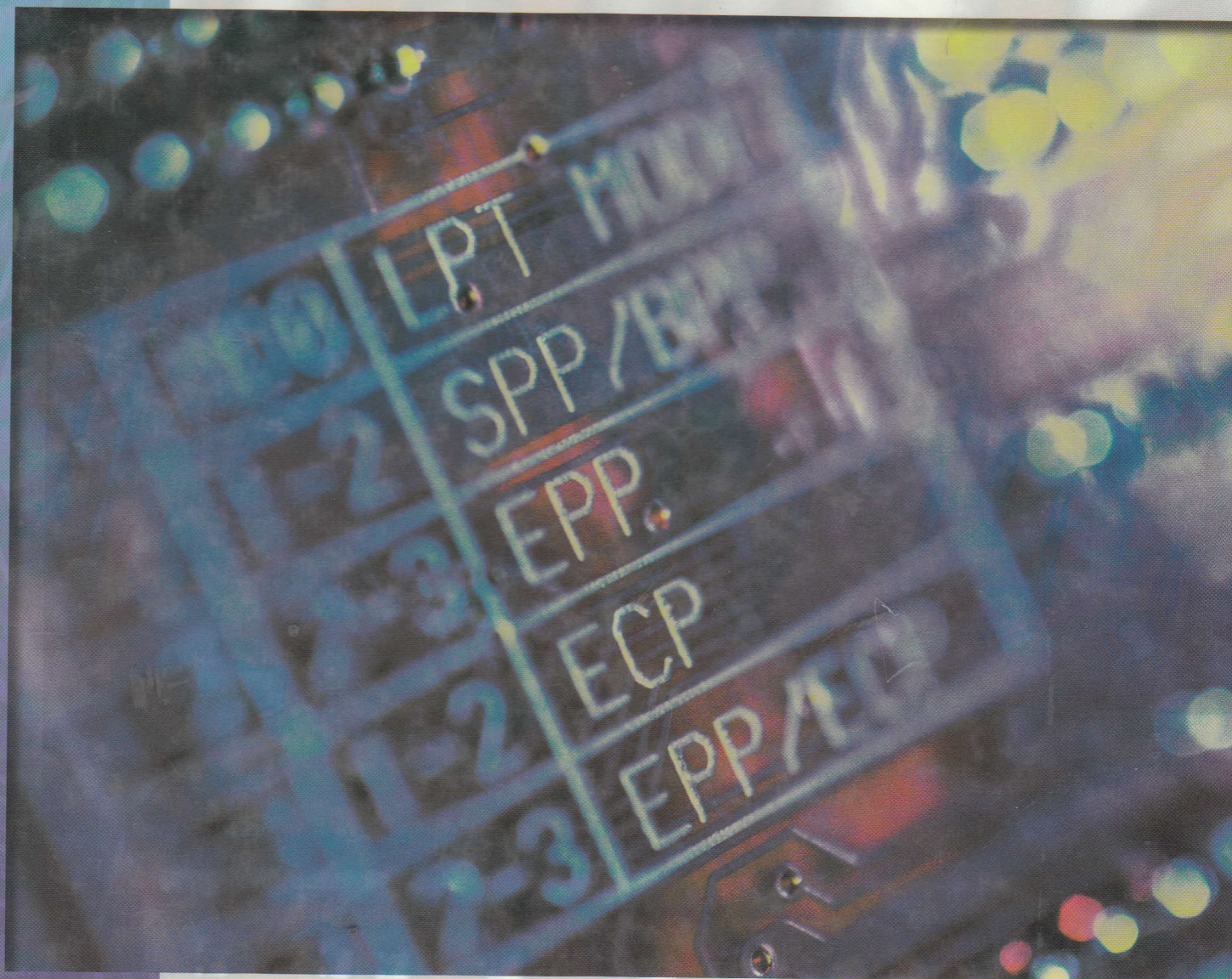
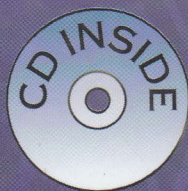


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DELMAR LEARNING™

# Digital Electronics



5th Edition James W. Bignell  
Robert Donovan





# Number Systems

## OUTLINE

- 1.1 Binary Number System
- 1.2 Binary to Decimal Conversion
- 1.3 Decimal to Binary Conversion
- 1.4 Octal Number System
- 1.5 Binary to Octal Conversion
- 1.6 Octal to Binary Conversion
- 1.7 Hexadecimal Number System
- 1.8 Binary to Hexadecimal Conversion
- 1.9 Hexadecimal to Binary Conversion
- 1.10 Binary-Coded Decimal (BCD)
- 1.11 Binary Addition
- 1.12 Binary Subtraction
- 1.13 Troubleshooting a 4-Bit Adder

## Digital Application Binary and Hexadecimal Number Systems

LAB 1A 7483 4-Bit Full Adder

LAB 1B 4008 4-Bit Full Adder

## KEY TERMS

anode

binary

Binary-Coded Decimal  
(BCD)

bit

carry-in

carry-out

cathode

hexadecimal

light-emitting diode  
(LED)

octal



## OBJECTIVES

After completing this chapter, you should be able to:

- Count in binary, octal, hexadecimal, and binary-coded decimal (BCD).
- Convert from decimal to binary and binary to decimal.
- Convert from binary to octal and octal to binary.
- Convert from binary to hexadecimal and hexadecimal to binary.
- Convert from decimal to BCD and BCD to decimal.
- Add and subtract binary numbers.