Chapter 0

2.

(a) $100100_2 = 36_{10}$
(b) $1000001_2 = 65_{10}$
(c) $11101_2 = 29_{10}$
(d) $1010_2 = 10_{10}$
(e) $00100010_2 = 34_{10}$

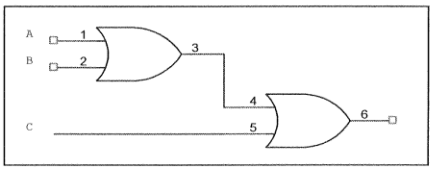
3.

(a) $100100_2 = 24_{16}$
(b) $1000001_2 = 41_{16}$
(c) $11101_2 = 1D_{16}$
(d) $1010_2 = 0A_{16}$
(e) $00100010_2 = 22_{16}$

6.

(a) 1001010 = 0011 0110
(b) 111001 = 0000 0111
(c) 10000010 = 0111 1110
(d) 111110001 = 0000 1111

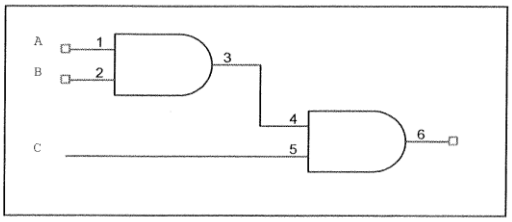
11.



12.

A	B	C	Y
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

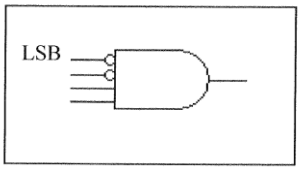
13.



14.

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

18.



20.

CLK	D	Q
No	X	NC
Yes	0	0
Yes	1	1

21. (a) 4
(b) 4
(c) 4
(d) 1 048 576, 2^{20}
(e) 1024K
(f) 1 073 741 824, 2^{30}
(g) 1 048 576 K
(h) 1024M
(i) 8388608, 8192K

24. $2^{32} - 1 = 4294967295$

27. Data bus is bidirectional, address is unidirectional.
28. PC (Program Counter)

30. Address, control and data

Chapter 1

1. False: A general-purpose microprocessor does not have on-chip ROM.
2. True: A microcontroller has on-chip ROM.
3. True: A microcontroller has on-chip I/O ports.
4. True: A microcontroller has a fixed amount of RAM on the chip.
5. CPU, RAM, ROM, I/O, Timer, Serial COM port
6. RAM and ROM

11. Power consumption

15. Only A is true, 8 bit software will run on a 16 bit system

21. 32 pins

29. The 8031 does not have on-chip ROM.