4. In positive logic, a 1 is represented by a HIGH level and a 0 by a LOW level. In negative logic, a 1 is represented by a LOW level, and a 0 by a HIGH level.

8. $T = 4$ ms. See Figure 1-3.

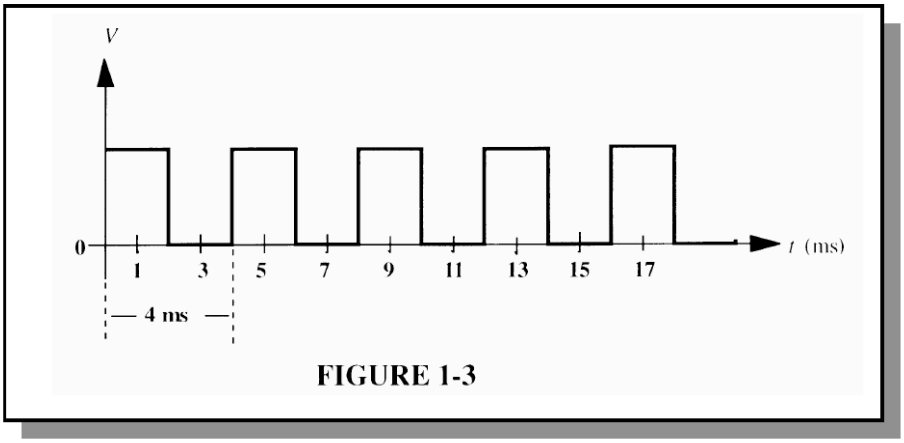

FIGURE 1-3

12. See Figure 1-4.

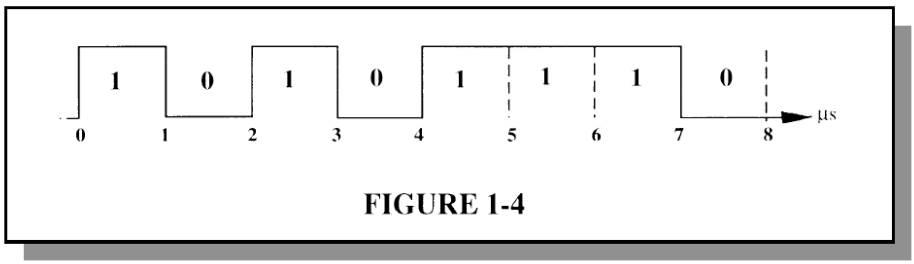

FIGURE 1-4

14. $T = \dfrac{1}{f} = \dfrac{1}{3.5\text{ GHz}} = \mathbf{0.286\text{ ns}}$

18. An OR gate produces a HIGH output when *either or both* inputs are HIGH. An exclusive-OR gate produces a HIGH if one input is HIGH and the other LOW.

20. $T = \dfrac{1}{10\text{ kHz}} = 100\ \mu\text{s}$

$$\text{Pulses counted} = \frac{100\text{ ms}}{100\ \mu\text{s}} = 1000$$

24. See Figure 1-8.

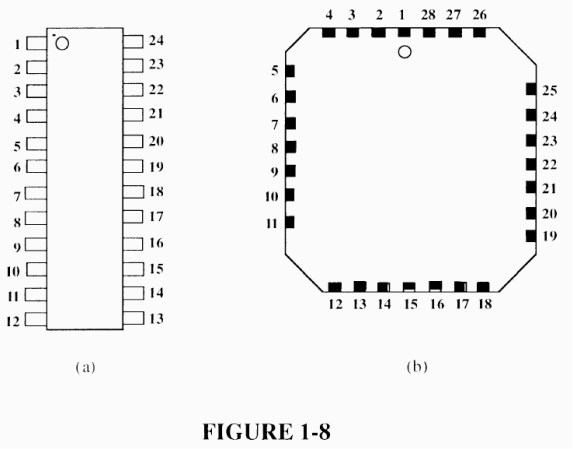

FIGURE 1-8