

Homework 1 Solutions for Computer Logic and Circuit Design: PHYS306/COSC330

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1 1-2: Binary Digits, Logic Levels, and Digital Waveforms

- Exercise 7: a) $0.6 \mu\text{s}$, from 0.2 to $0.8 \mu\text{s}$. Remember the convention is 10-90 percent of the amplitude. b) $0.55 \mu\text{s}$. c) $2.7 \mu\text{s}$. d) 10 V .

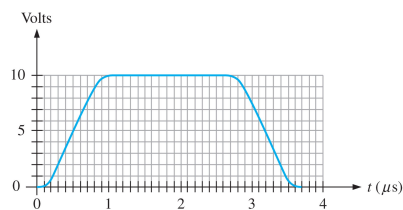


Figure 1: The digital pulse for exercise 7.

- Exercise 8: The period is 4 ms .
- Exercise 9: The frequency is the inverse of the period, so 0.25 kHz .

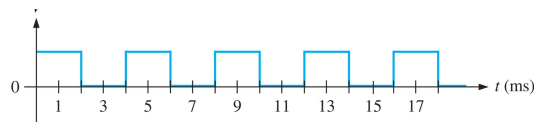


Figure 2: The bitstream/timing diagram for exercise 8.

- Exercise 10: This is an example of a periodic signal. (*It's a clock signal*).
- Exercise 10: The duty cycle is 50%. The pulse width is 2 ms and the period is 4 ms so the ratio is one-half.