

UNCC, Department of Electrical and Computer Engineering  
ECGR 2181, Fall 2008, Quiz #10, 11/18/2008

Name: \_\_\_\_\_

1. Consider the following clock signal:

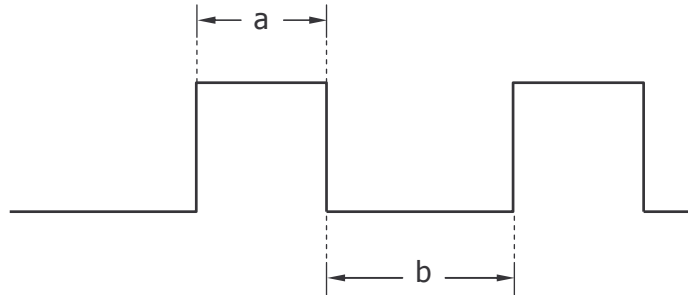


Figure 1, Clock Signal

- a. (20 pts.) What is the duty cycle (%) of the waveform in Figure 1, where  $a=20$  ns and  $b=30$ ns.
- b. (20 pts.) Assume the waveform is cyclic - what is the period and frequency of this wave?
2. (60 pts.) Write a finite state machine diagram for a washing machine that one input, a single button that identifies heavily soiled clothing. Regular washing has a wash, rinse and spin cycle, heavily soiled washing has two wash/rinse cycles and one spin. There is a 10 minute timer that identified the end of each cycle.