USAF Academy
Department of Electrical and Computer Engineering
ECE 321 – Electronics 1

Fall 2016

The Digital Lab – Prelab

(Each Part due at beginning of class IAW syllabus. Make a copy for yourself.)

Part B Prelab. Logic Gates

Prelab B. Demonstration of Part B in Lab

By the end of day 2 demonstrate the following.

(25 pts) Circuit build

Demonstrate that you built your circuit on the protoboard with power supply, function generator, counter, and all CMOS gates appropriately connected.

(25 pts) Test Equipment setup

Demonstrate you appropriately connected your test equipment (o-scope, DMM, etc.) to verify the correct logic outputs F_1 and F_2.

(25 pts) Demonstration

Demonstrate on the oscilloscope your input bit streams (A, B, C) from the counter and output bit streams (F_1 and F_2) from the logic gates.

(25 pts) Characterization

Fill in the truth table and logic functions below indicating the correct logic function.

A	B	C	F_1	F_2
0	0	0		
0	0	1		
0	1	0		
0	1	1		
1	0	0		
1	0	1		
1	1	0		
1	1	1		

$F_1=$_____

$F_2=$_____