

Name and Student ID: \_\_\_\_\_ Lab Section: \_\_\_\_\_

Date: \_\_\_\_\_

**Submission Instructions:**

**Prelab:**

1. Complete the prelab
2. Submit this report with the prelab completed to Canvas before your lab starts

**Lab:**

1. Complete the lab according to the instructions
2. Take screenshots of your ModelSim waveform (note: to receive points your NetID has to be present in the screenshot) and insert them into this document.
3. Include screenshots of any related block design files or Verilog files in the report
4. Complete this report and reupload it to Canvas

**PRELAB:**

**Q1.** Use Figure 1 and the table below to fill in the truth table on the next page.

X <sub>3</sub>	X <sub>2</sub>	X <sub>1</sub>	X <sub>0</sub>	Display
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7

X <sub>3</sub>	X <sub>2</sub>	X <sub>1</sub>	X <sub>0</sub>	Display
1	0	0	0	8
1	0	0	1	9
1	0	1	0	A
1	0	1	1	b
1	1	0	0	c
1	1	0	1	d
1	1	1	0	e
1	1	1	1	f

## Lab 5 Answer Sheet

$X_3$	$X_2$	$X_1$	$X_0$	A	B	C	D	E	F	G
0	0	0	0	0	0	0	0	0	0	1
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	0	0	0							
1	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							

**Q2.** Write the verilog code for the 7-Segment Display Decoder based on the truth table from Q1. You only need to write the skeleton code (i.e., a code which shows only a rough outline and no unnecessary or repetitive details) below.

### LAB:

#### 3.0 Lab5step0

Hardware demonstrates a good circuit.

<<<Insert a screenshot of your Verilog file>>>

Lab5step0 Result:

**To get full points, replace this screenshot with your results**

- To find your NetID, open the start menu and search for "This PC". Then scroll down to reveal your NetID

**Example Screenshot  
Replace Me!**

**Must show your  
NetID and  
verified waveform**

### 4.0 Lab5step1

Hardware demonstrates a good circuit.

<<<Insert a screenshot of your BDF file here>>>

Lab5step1 results:

**To get full points, replace this screenshot with your results**

- To find your NetID, open the start menu and search for "This PC". Then scroll down to reveal your NetID

