Table etc

provide a logic equation for segment A (CA).

D3’D2’D1’D0 + D3’D2D1’D0’ + D3D2’D1D0 + D3D2D1’D0

What would happen if all four anode control signals were set to a logic value of 0 simultaneously in the example above?

All four of the digits would display 3 with the decimal point.

Determine what will be shown on the display with the following signal values.

7\_7\_

Copy and paste the testbench console output into your report (the console should report no errors).

source tb\_SevenSegment.tcl

# set curr\_wave [current\_wave\_config]

# if { [string length $curr\_wave] == 0 } {

# if { [llength [get\_objects]] > 0} {

# add\_wave /

# set\_property needs\_save false [current\_wave\_config]

# } else {

# send\_msg\_id Add\_Wave-1 WARNING "No top level signals found. Simulator will start without a wave window. If you want to open a wave window go to 'File->New Waveform Configuration' or type 'create\_wave\_config' in the TCL console."

# }

# }

# run 1000ns

\*\*\* Start of Simulation \*\*\*

Correct: with data input 0x0 segments[6:0]=1000000 at time 80 ns

Correct: with data input 0x1 segments[6:0]=1111001 at time 120 ns

Correct: with data input 0x2 segments[6:0]=0100100 at time 160 ns

Correct: with data input 0x3 segments[6:0]=0110000 at time 200 ns

Correct: with data input 0x4 segments[6:0]=0011001 at time 240 ns

Correct: with data input 0x5 segments[6:0]=0010010 at time 280 ns

Correct: with data input 0x6 segments[6:0]=0000010 at time 320 ns

Correct: with data input 0x7 segments[6:0]=1111000 at time 360 ns

Correct: with data input 0x8 segments[6:0]=0000000 at time 400 ns

Correct: with data input 0x9 segments[6:0]=0010000 at time 440 ns

Correct: with data input 0xa segments[6:0]=0001000 at time 480 ns

Correct: with data input 0xb segments[6:0]=0000011 at time 520 ns

Correct: with data input 0xc segments[6:0]=1000110 at time 560 ns

Correct: with data input 0xd segments[6:0]=0100001 at time 600 ns

Correct: with data input 0xe segments[6:0]=0000110 at time 640 ns

Correct: with data input 0xf segments[6:0]=0001110 at time 680 ns

\*\*\* Simulation done with 0 errors at time 700 ns \*\*\*

INFO: [USF-XSim-96] XSim completed. Design snapshot 'tb\_SevenSegment\_behav' loaded.

INFO: [USF-XSim-97] XSim simulation ran for 1000ns

launch\_simulation: Time (s): cpu = 00:00:04 ; elapsed = 00:00:12 . Memory (MB): peak = 1022.426 ; gain = 0.000

Provide a summary of your synthesis warnings and and explanation of why they do or do not matter (be careful - it will be rare when a warning can be ignored but it does happen, you just need to figure out when that is).

I had a warning that said that the width of segment in the top level design was 8 and that is was trying to be passed into the original seven segment design which only had room for 7. I fixed this by changing the length of the bits of segment in the top level design to only be the 7 lower bits. The 8th would then be separate for the center button and the decimal point.

LUT - 5

IO - 17