

ECE238 – Lab 6

Name:.....

Section:.....

Date:.....

1- Consider a 2-by-2 switch. It has two input data ports, **x0** and **x1**, and a 2-bit control signal, **ctrl** (also input). The input data are routed to output ports **y0** and **y1** according to the **ctrl** signal. The function table is specified below.

Input	Output		Function
ctrl	y1	y0	
00	x1	x0	pass
01	x0	x1	cross
10	x0	x0	broadcast x0
11	x1	x1	broadcast x1

a) Write the VHDL description for the circuit by using **selected signal assignments** only (i.e., do not use **processes**). Please refer to Section 4.4 of the book by P. Chu for references about **selected signal assignments**.

b) Write the VHDL description for the circuit by using a **process** and a **case statement**. Please refer to Section 5.5 of the book by P. Chu for reference about **case statement**. For both parts, simulate the circuit and attach the waveform and the code.