

ECE 385 Sample Final Solution

Lab 7

1. Which below is not a typical component of an SoC?
a. CPU b. memory c. peripherals d. accelerators **e. GPU**
2. Which below is not our tasks for Lab 7?
a. Making a green LED blink on the FPGA
b. LEDs increment by one when pressing 'Accumulate'
c. LEDs increment by the switches value when pressing 'Accumulate'
d. LEDs overflow to 0 when the values reach 255

Lab 8

3. What is the hex value of the keycode when no key is pressed?
a. 00 b. 1A c. 16 d. FF
4. Assuming the ball step size in x direction (Ball_X_Step) is 10. At current time step the ball is moving right and the right tip of the ball (Ball_X_Pos + Ball_Size) is at screen pixel x = 637, y = 200 (screen size 640x480). What will happen to the ball at the immediate following time steps if no extra care is taken?
a. The ball will go out of the boundary and disappear forever.
b. The ball will be stuck to the left edge of the screen.
c. The ball will immediately bounce back and travel to the left.
d. The ball will continue left and eventually come back from the right edge of the screen.

Lab 9

5. What is the provided state machine in the aes_controller module for?
a. Communication between NiosII and the keyboard
b. Looping through the AES rounds
c. Communication between software and hardware
d. Transfer memory between software and hardware
6. Is the mathematical operation in AddRoundKey the same as InvAddRoundKey?
a. Yes b. No