

# CE 1911

## Dr. Johnson

### Final Exam

No notes  
No calculator

- 1 – Match the description to the best term 5pts
- 2 – Create a state transition diagram 10pts
- 3 – Write the next state logic **PROCESS** and the output **PROCESS** for the ...  
(no *process(all)* allowed) 15pts
- 4 – Determine the total number of address lines required 10pts
- 5 – Assuming a square memory cell 10pts
- 6 – Complete the VHDL for ... memory (4 boxes to fill) 15pts
- 7 – Instruction encoding 15pts
- 8 – Assume RA, RB, RC, RD 15pts
- 9 – Assume RA, RB, RC, RD 15pts
- 10 – ALU operation 10pts
- 11 – Provide the definition 5 pts
- 12 – Concept Question 5 pts

Instruction				Reg 1		Reg 2		WR Reg		Immediate Value					

or            0000

and          0001

nor          0010

nand        0011

add          0100

sub          0101

slt          0110

ld           1000

st           1001

ldi         1100

00 – A

01 – B

10 – C

11 – D

signed Hex

0x20 to 0x1F

100000 to 011111

-32 to 31