

COMP 411
Problem Set #2 Solutions

Problem 1: 21 points total (3 points each)

- A.) 0x00095040
- B.) 0x308b0001
- C.) 0x014b4825
- D.) 0x00042043
- E.) 0x2108fffe
- F.) 0x15000001 or 0x15000000
- G.) 0x3c08bead

Problem 2: 21 points total (3 points each)

- A.) add \$t1, \$0, \$0
- B.) andi \$t2, \$a0, 1
- C.) beq \$t2, \$0, 12
- D.) srl \$a0, \$a0, 1
- E.) addi \$t1, \$t1, 1
- F.) bne \$a0, \$0, -12
- G.) andi \$t2, \$a0, 1

Problem 3: 18 points total (3 points each)

- A.) add \$rA, \$rB, \$0
- B.) nor \$rA, \$rB, \$0
- C.) sub \$rA, \$0, \$rB
- D.) sltiu \$rA, \$rB, 1
- E.) add \$rA, \$rb, -imm
- F.) srl \$rA, \$rB, 31 (or 32)

Problem 4: 19 points total

A.) 4 points

Memory Range: 0x00000000 – 0x000007ffc (8192 memory locations)
0xffff80000 – 0xffffffc (8192 memory locations)

B.) 3 points

The result of the effective address calculations must be a multiple of 4.

C.) 4 points

addi \$t0, \$t1, 200

D.) 5 points

sll \$t2, \$t1, 2

add \$t2, \$t1, \$t0

lw \$t2, 0(\$t2)

E.) 3 points

Store instructions, like sw, are the only I-format instruction where rt field is a source not a destination.