

EE 2310 Homework #8 – MIPS Register-Register Instructions

Name: _____

Student Number: _____

R0 (r0): 0x00000000	R8 (t0): 0x0f0f0f0f	R16 (s0): 0x00000000	R24 (t8): 0x00000000
R1 (at): 0x10010000	R9 (t1): 0x0000ffff	R17 (s1): 0x00000000	R25 (t9): 0x00000000
R2 (v0): 0x0000000b	R10 (t2): 0x00000000	R18 (s2): 0x00000058	R26 (k0): 0x00000000
R3 (v1): 0x00000000	R11 (t3): 0x10010020	R19 (s3): 0x00000000	R27 (k1): 0x00000000
R4 (a0): 0x00000058	R12 (t4): 0x100100f0	R20 (s4): 0x00000000	R28 (gp): 0x10008000
R5 (a1): 0x10010010	R13 (t5): 0x10010030	R21 (s5): 0x00000000	R29 (sp): 0x7ffffeff0
R6 (a2): 0x0000000a	R14 (t6): 0x80000080	R22 (s6): 0x00000000	R30 (s8): 0x00000000
R7 (a3): 0x00000010	R15 (t7): 0xffff0000	R23 (s7): 0x00000050	R31 (ra): 0x00400070

MIPS Registers

Solve the following questions using the register readouts above. **NOTE: If a register's contents are changed in any problem, that change DOES NOT carry over to other problems.**

1. What are the contents of register 9 (and what is it's other name)? _____
2. Why should \$at not be used in SPIM programming? _____

3. What is a specific use for \$v0? _____

4. After: add \$s3, \$a1, \$a3, what are the contents of \$s3? _____
5. After: and \$t2, \$t1, \$t0, what are the contents of \$t2? _____
6. After: or \$s8, \$t6, \$t4, what are the contents of \$s8? _____
7. After: xor \$t4, \$t1, \$sp, what are the contents of \$t4? _____

8. After: sub \$t2, \$t5, \$t3, what are the contents of \$t2? _____
9. After: move \$t2, \$sp, what are the contents of \$t2? _____
10. After: mul \$t2, \$a2, \$a3, what are the contents of \$t2? _____
11. After: add \$t2, \$a0, \$v0, what are the contents of \$t2? _____
12. After: slt \$t2, \$t4, \$t3, is there a 0 or 1 in \$t2? _____
13. After: xor \$t2, \$t1, \$t0, what are the contents of \$t2? _____
14. After: move \$t2, \$sp, what are the contents of \$sp?
(Yes, state the contents of \$sp, NOT \$t2). _____
15. After: xori \$t2, \$t0, 0x0f0f 0f0f, what are the contents of \$t2? _____
16. After: sub \$t2, \$s7, \$a3, what are the contents of \$t2? _____
17. After: and \$t2, \$t4, \$t1, what are the contents of \$t2? _____
18. After: or \$t2, \$t7, \$s7, what are the contents of \$t2? _____
19. After: add \$t2, \$a0, \$ra, what are the contents of \$t2? _____
20. After: or \$t2, \$t4, \$a1, what are the contents of \$t2? _____
21. After: not \$t2, \$a3, what are the contents of \$t2? _____
22. After: addi \$t2, \$a0, 16 what are the contents of \$t2? _____
23. After: addi \$t2, \$a2, 12 what are the contents of \$t2? _____
24. After: neg \$t2, \$a3, what are the contents of \$t2? _____
25. What kind of instruction is li? Why is it called that? _____

