

# CSE301 – Computer Organization

## Tutorial 5 - part ii

**Q1** Diagram how the following code will be executed on a dual issue processor with 2 ALUs and one memory unit.

```
lw $t0, 0($s0)
lw $t1, 0($t0)
lw $t2, 0($t1)
addi $t2, $t2, 5
sw $t2, 0($t1)
addi $s0, $s0, 4
add $t6, $t4, $s5
```

		ALU1		ALU2		Memory		Commit	
	IF/ID	In	Out	In	Out	In	Out	In	Out
lw									
lw									
lw									
addi									
sw									
addi									
add									

**Q2** Diagram how the following code will be executed on a dual issue processor with 2 ALUs and one memory unit.

```
addi $sp, $sp, -8
sw $s0, 0($sp)
sw $ra, 4($sp)
add $s0, $t0, $t7
sub $a0, $s0, $t3
lw $s0, 0($sp)
lw $ra, 4($sp)
addi $sp, $sp, 8
```

		ALU1	ALU2	Memory	Commit
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[illegible]