1.)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Mips Inst. | ALU Src | Memto-Reg | Reg-write | Mem Read | Mem Write | Branch | ALU Control Code |
| Sw | 1 | X | 0 | 0 | 1 | 0 | 0010 |

2.)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Mips Inst. | ALU Src | Memto-Reg | Reg-write | Mem Read | Mem Write | Branch | ALU Control Code |
| Addi | 1 | X | 1 | 1 | 0 | 0 | 0010 |

3.)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Mips Inst. | ALU Src | Memto-Reg | Reg-write | Mem Read | Mem Write | Branch | ALU Control Code |
| slt | 0 | 0 | 1 | 0 | 0 | 0 | 0111 |

4.)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Mips Inst. | ALU Src | Memto-Reg | Reg-write | Mem Read | Mem Write | Branch | ALU Control Code |
| j | X | X | 0 | 0 | 0 | x | XXXX |

5.)

K=12 (because 3 stacks at 4 bits each)

Registers that need to stored in the stack:

$v0,$a0,$s1