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| **INSTRUCCIONES DE CARGA Y ALMACENAMIENTO** | | | | | | | | | |
| Instr. | Ejemplo | Significado | Código de operación | | | | | | Microinstrucciones |
| LI | LI Rd, #Slit16 | Rd = Slit16 | 01 | Rd | Slit16 | | | | WR |
| LWI | LWI Rd, lit16 | Rd = Mem[lit16] | 02 | Rd | lit16 | | | | SDMD SWD WR |
| LW | LW Rd,lit12(Rt) | Rd = Mem[Rt+lit12] | 23 | Rd | Rt | lit12 | | | SWD SEXT SOP2 ALUOP=0011 WR LF |
| SWI | SWI Rd, lit16 | Mem[lit16] = Rd | 03 | Rd | lit16 | | | | SR2 SDMD WD |
| SW | SW Rd, lit12(Rt) | Mem[Rt+lit12] = Rd | 04 | Rd | Rt | lit12 | | | SR2 SEXT SOP2 ALUOP=0011 WD LF |
| **INSTRUCCIONES ARITMÉTICAS** | | | | | | | | | |
| ADD | ADD Rd,Rt,Rs | Rd = Rt+Rs | 00 | Rd | Rt | Rs | S/U | 00 | SWD WR LF SR ALUOP=0011 |
| SUB | SUB Rd,Rt,Rs | Rd = Rt-Rs | 00 | Rd | Rt | Rs | S/U | 01 | SWD WR LF SR ALUOP=0111 |
| ADDI | ADDI Rd,Rt,#Slit12 | Rd = Rt+Slit12 | 05 | Rd | Rt | Slit12 | | | SWD WR LF SR ALUOP=0011 SOP2 |
| SUBI | SUBI Rd,Rt,#Slit12 | Rd = Rt-Slit12 | 06 | Rd | Rt | Slit12 | | | SWD WR LF SR ALUOP=0111 SOP2 |
| **INSTRUCCIONES LÓGICAS** | | | | | | | | | |
| AND | AND Rd,Rt,R | Rd=Rt&Rs | 00 | Rd | Rt | Rs | S/U | 02 | SWD WR SR ALUOP=0000 LF |
| OR | OR Rd,Rt,Rs | Rd=Rt | Rs | 00 | Rd | Rt | Rs | S/U | 03 | SWD WR SR ALUOP=0001 LF |
| XOR | XOR Rd,Rt,Rs | Rd=Rt ^ Rs | 00 | Rd | Rt | Rs | S/U | 04 | SWD WR SR ALUOP=0010 LF |
| NAND | NAND Rd,Rt,Rs | Rd=~(Rt & Rs) | 00 | Rd | Rt | Rs | S/U | 05 | SWD WR SR ALUOP=1101 LF |
| NOR | NOR Rd,Rt,Rs | Rd=~(Rt | Rs) | 00 | Rd | Rt | Rs | S/U | 06 | SWD WR SR ALUOP=1100 LF |
| XNOR | NOR Rd,Rt,Rs | Rd=~(Rt ^ Rs) | 00 | Rd | Rt | Rs | S/U | 07 | SWD WR SR ALUOP=0110 LF |
| NOT | NOT Rd, Rs | Rd = ~Rs | 00 | Rd | Rs | Rs | S/U | 08 | SWD WR SR ALUOP=1101 LF |
| ANDI | ANDI Rd,Rt,#lit12 | Rd=Rt & lit12 | 07 | Rd | Rt | lit12 | | | SEXT SOP2 ALUOP=0000 LF SR SWD WR |
| ORI | ORI Rd,Rt,#lit12 | Rd=Rt | lit12 | 08 | Rd | Rt | lit12 | | | SEXT SOP2 ALUOP=0001 LF SR SWD WR |

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| XORI | XORI Rd,Rt,#lit12 | Rd=Rt ^ lit12 | 09 | Rd | Rt | lit12 | | | SEXT SOP2 ALUOP=0010 LF SR SWD WR |
| NANDI | NANDI Rd,Rt,#lit12 | Rd=~(Rt & lit12) | 10 | Rd | Rt | lit12 | | | SEXT SOP2 ALUOP=1101 LF SR SWD WR |
| NORI | NORI Rd,Rt,#lit12 | Rd=~(Rt | lit12) | 11 | Rd | Rt | lit12 | | | SEXT SOP2 ALUOP=1100 LF SR SWD WR |
| XNORI | XNORI Rd,Rt,#lit12 | Rd=~(Rt ^ lit12) | 12 | Rd | Rt | lit12 | | | SEXT SOP2 ALUOP=0110 LF SR SWD WR |
| **INSTRUCCIONES DE CORRIMIENTO** | | | | | | | | | |
| SLL | SLL Rd,Rt,#lit4 | Rd=Rt<<lit4 | 00 | Rd | Rt | S/U | lit4 | 09 | SHE DIR WR |
| SRL | SRL Rd,Rt,#lit4 | Rd=Rt>>lit4 | 00 | Rd | Rt | S/U | lit4 | 10 | SHE WR |
| **INSTRUCCIONES DE SALTOS CONDICIONALES E INCONDICIONALES** | | | | | | | | | |
| BEQI | BEQI Rd,Rt,Slit12 | If(Rd==Rt) goto Slit12 PC = PC + Slit12 | 13 | Rd | Rt | Slit12 | | | SR2 LF ALUOP=0111  SOP1 SOP2 ALUOP=0011 LF SR SDMP WPC |
| BNEI | BNEI Rd,Rt,Slit12 | If(Rd!=Rt) goto Slit12 PC = PC + Slit12 | 14 | Rd | Rt | Slit12 | | | SR2 LF ALUOP=0111  SOP1 SOP2 ALUOP=0011 LF SR SDMP WPC |
| BLTI | BLTI Rd,Rt,Slit12 | If(Rd<Rt) goto Slit12 PC = PC + Slit12 | 15 | Rd | Rt | Slit12 | | | SR2 LF ALUOP=0111  SOP1 SOP2 ALUOP=0011 LF SR SDMP WPC |
| BLETI | BLETI Rd,Rt,Slit12 | If(Rd<=Rt) goto Slit12 PC = PC + Slit12 | 16 | Rd | Rt | Slit12 | | | SR2 LF ALUOP=0111  SOP1 SOP2 ALUOP=0011 LF SR SDMP WPC |
| BGTI | BGTI Rd,Rt,Slit12 | If(Rd>Rt) goto Slit12 PC = PC + Slit12 | 17 | Rd | Rt | Slit12 | | | SR2 LF ALUOP=0111  SOP1 SOP2 ALUOP=0011 LF SR SDMP WPC |
| BGETI | BGETI Rd,Rt,Slit12 | If(Rd>=Rt) goto Slit12 PC = PC + Slit12 | 18 | Rd | Rt | Slit12 | | | SR2 LF ALUOP=0111  SOP1 SOP2 ALUOP=0011 LF SR SDMP WPC |
| B | B lit16 | PC = lit16 | 19 | S/U | lit16 | | | | WPC |
| **INSTRUCCIONES DE MANEJO DE SUBRUTINAS** | | | | | | | | | |
| CALL | CALL #lit16 | PC(n+1) = lit16 | 20 | S/U | lit16 | | | | UP WPC |

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| RET | RET | PC = PC(n-1) | 21 | S/U | S/U | S/U | S/U | S/U | DW |
| **OTRAS INSTRUCCIONES** | | | | | | | | | |
| NOP | NOP |  | 22 | S/U | S/U | S/U | S/U | S/U | ------ |

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| MEMORIA DE MICROCÓDIGO DE OPERACIÓN | | | | | | | | | | | | | | | | | | |
| OP | UP | DW | WPC | SDMP | SR2 | SWD | SHE | DIR | WR | LF | SEXT | SOP1 | SOP2 | ALUOP | SDMD | WD | SR | ITR |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14-17 | 18 | 19 | 20 |  |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0111 | 0 | 0 | 0 | BCON |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 | LI |
| 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0000 | 1 | 0 | 0 | LWI |
| 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0000 | 1 | 1 | 0 | SWI |
| 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0011 | 0 | 1 | 0 | SW |
| 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0011 | 0 | 0 | 1 | ADDI |
| 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0111 | 0 | 0 | 1 | SUBI |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0000 | 0 | 0 | 1 | ANDI |
| 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0001 | 0 | 0 | 1 | ORI |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0010 | 0 | 0 | 1 | XORI |
| 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1101 | 0 | 0 | 1 | NANDI |
| 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1100 | 0 | 0 | 1 | NORI |
| 12 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0110 | 0 | 0 | 1 | XNORI |
| 13 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0011 | 0 | 0 | 1 | BEQI |
| 14 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0011 | 0 | 0 | 1 | BNEI |
| 15 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0011 | 0 | 0 | 1 | BLTI |
| 16 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0011 | 0 | 0 | 1 | BLETI |
| 17 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0011 | 0 | 0 | 1 | BGTI |
| 18 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0011 | 0 | 0 | 1 | BGETI |
| 19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 | B |
| 20 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 | CALL |
| 21 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 | RET |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 | NOP |
| 23 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0011 | 0 | 0 | 0 | LW |

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| MEMORIA DE MICROCÓDIGO DE FUNCIÓN | | | | | | | | | | | | | | | | | | |
| FN | UP | DW | WPC | SDMP | SR2 | SWD | SHE | DIR | WR | LF | SEXT | SOP1 | SOP2 | ALUOP | SDMD | WD | SR | ITR |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14-17 | 18 | 19 | 20 |  |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0011 | 0 | 0 | 1 | ADD |
| 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0111 | 0 | 0 | 1 | SUB |
| 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0000 | 0 | 0 | 1 | AND |
| 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0001 | 0 | 0 | 1 | OR |
| 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 1 | XOR |
| 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1101 | 0 | 0 | 1 | NAND |
| 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1100 | 0 | 0 | 1 | NOR |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0110 | 0 | 0 | 1 | XNOR |
| 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1101 | 0 | 0 | 1 | NOT |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 | SLL |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 | SRL |