|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **INSTRUCTION** | **OP CODE** | | | | **REGISTER** | | | | | **ADDR.MODE** | | | **REGISTER** | | | | | **REGISTER** | | | | |
| **LOAD/STORE INSTRUCTIONS:** | | | | | | | | | | | | | | | | | | | | | | |
| li *r5, #100* | 0 | 0 | 0 | 1 | r5 | | | | | 0 | 0 | 1 | x | | x | | x | x | | x | | x |
| IMMEDIATE | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| lr r5, r7 | 0 | 0 | 0 | 1 | r5 | | | | | 0 | 1 | 0 | r7 | | | | | x | | x | | x |
|  | | | | | | | | | | | | | | | | | | | | | | |
| lx r5, 10(r1, r7) | 0 | 0 | 0 | 1 | r5 | | | | | 0 | 1 | 1 | r1 | | | | | r7 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| ldn *r5, @ 10(r1, r7)* | 0 | 0 | 0 | 1 | r5 | | | | | 1 | 0 | 0 | r1 | | | | | r7 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| stx r5, 10(r1,r7) | 0 | 0 | 1 | 0 | r5 | | | | | 0 | 1 | 1 | r1 | | | | | r7 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| stdn *r5, @ 10(r1, r7)* | 0 | 0 | 1 | 0 | r5 | | | | | 1 | 0 | 0 | r1 | | | | | r7 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| stx *-5(r2), r3* | 0 | 0 | 1 | 0 |  | |  | |  | 1 | 0 | 1 | r2 | | | | | r3 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| stn *@-5(r2), r3* | 0 | 0 | 1 | 0 |  | |  | |  | 1 | 1 | 0 | x | x | | x | | x | x | | x | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
| **ARITHMETIC INSTRUCTIONS:** | | | | | | | | | | | | | | | | | | | | | | |
| addi *r1, #43* | 0 | 0 | 1 | 1 | r1 | | | | | 0 | 0 | 1 | r2 | | | | | r3 | | | | |
| IMMEDIATE | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| addr r5, r7 | 0 | 0 | 1 | 1 | r5 | | | | | 0 | 1 | 0 | r7 | | | | | x | | x | | x |
|  | | | | | | | | | | | | | | | | | | | | | | |
| addx r5, 10(r1, r7) | 0 | 0 | 1 | 1 | r5 | | | | | 0 | 1 | 1 | r1 | | | | | r7 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| adddn *r5, @ 10(r1, r7)* | 0 | 0 | 1 | 1 | r5 | | | | | 1 | 0 | 0 | r1 | | | | | r7 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| subi *r1, #43* | 0 | 1 | 0 | 0 | r1 | | | | | 0 | 0 | 1 | r2 | | | | | r3 | | | | |
| IMMEDIATE | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| subr r5, r7 | 0 | 1 | 0 | 0 | r5 | | | | | 0 | 1 | 0 | r7 | | | | | x | | x | | x |
|  | | | | | | | | | | | | | | | | | | | | | | |
| subx r5, 10(r1,r7) | 0 | 1 | 0 | 0 | r5 | | | | | 0 | 1 | 1 | r1 | | | | | r7 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| subdn *r5, @ 10(r1, r7)* | 0 | 1 | 0 | 0 | r5 | | | | | 1 | 0 | 0 | r1 | | | | | r7 | | | | |
| OFFSET | | | | | | | | | | | | | | | | | | | | | |
| **JUMP INSTRUCTIONS:** | | | | | | | | | | | | | | | | | | | | | | |
| j addr | 0 | 1 | 0 | 1 | x | x | | x | | 0 | 0 | 1 | x | x | | x | | x | x | | x | |
|  | ADDRESS JUMP | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| jz addr | 0 | 1 | 0 | 1 | x | x | | x | | 0 | 1 | 0 | x | x | | x | | x | x | | x | |
|  | ADDRESS JUMP | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| jnz addr | 0 | 1 | 0 | 1 | x | x | | x | | 0 | 1 | 1 | x | x | | x | | x | x | | x | |
|  | ADDRESS JUMP | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| jc addr | 0 | 1 | 0 | 1 | x | x | | x | | 1 | 0 | 0 | x | x | | x | | x | x | | x | |
|  | ADDRESS JUMP | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| jnc addr | 0 | 1 | 0 | 1 | x | x | | x | | 1 | 0 | 1 | x | x | | x | | x | x | | x | |
| ADDRESS JUMP | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| jm addr | 0 | 1 | 0 | 1 | x | x | | x | | 1 | 1 | 0 | x | x | | x | | x | x | | x | |
| ADDRESS JUMP | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| jnm addr | 0 | 1 | 0 | 1 | x | x | | x | | 1 | 1 | 1 | x | x | | x | | x | x | | x | |
| ADDRESS JUMP | | | | | | | | | | | | | | | | | | | | | |
| **SUBROUTINE CALL INSTRUCTIONS:** | | | | | | | | | | | | | | | | | | | | | | |
| jal r5, sub | 0 | 1 | 1 | 1 | r5 | | | | | 0 | 0 | 1 | x | x | | x | | x | x | | x | |
| SUB | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | |
| jr r5 | 0 | 1 | 1 | 1 | r5 | | | | | 0 | 0 | 1 | x | x | | x | | x | x | | x | |
|  | | | | | | | | | | | | | | | | | | | | | | |