				Inputs				Control outputs											Input bits				Output bits
INUM	Instruction	Mnemonic	Format	opcode	funct3	funct7	funct6	MSZ	ST	LD	M2R	BROp	RFW	ALUOp	ALUSrcA	ALUSrcB	PCsel	WDsel	opcode	funct3	funct7	funct6	
0	addi	ADDI	I	0010011	000	xxxxxxx	xxxxxx	00	0	0	0	000	1	0000	0	001	0	0	0b0010011	0b000	0bxxxxxxx	0bxxxxxx	0b00000000100000000100
1	add	ADDR	R	0110011	000	0000000	xxxxxx	00	0	0	0	000	1	0000	0	000	0	0	0b0110011	0b000	0b0000000	0bxxxxxx	0b00000000100000000000
2	call	JAL	J	1101111	xxx	xxxxxxx	xxxxxx	00	0	0	0	000	1	0000	1	101	1	1	0b1101111	0bxxx	0bxxxxxxx	0bxxxxxx	0b00000000100000110111
3	ret	JALR	I	1100111	000	xxxxxxx	xxxxxx	00	0	0	0	000	1	0000	0	001	1	1	0b1100111	0b000	0bxxxxxxx	0bxxxxxx	0b00000000100000000111
4	beq	BEQ	B	1100011	000	xxxxxxx	xxxxxx	00	0	0	0	001	0	0000	1	011	0	0	0b1100011	0b000	0bxxxxxxx	0bxxxxxx	0b00000001000000101100
5	bne	BNE	B	1100011	001	xxxxxxx	xxxxxx	00	0	0	0	010	0	0000	1	011	0	0	0b1100011	0b001	0bxxxxxxx	0bxxxxxx	0b00000010000000101100
6	blt	BLT	B	1100011	100	xxxxxxx	xxxxxx	00	0	0	0	011	0	0000	1	011	0	0	0b1100011	0b100	0bxxxxxxx	0bxxxxxx	0b00000011000000101100
7	bge	BGE	B	1100011	101	xxxxxxx	xxxxxx	00	0	0	0	100	0	0000	1	011	0	0	0b1100011	0b101	0bxxxxxxx	0bxxxxxx	0b00000100000000101100
8	sub	SUBR	R	0110011	000	0100000	xxxxxx	00	0	0	0	000	1	0001	0	000	0	0	0b0110011	0b000	0b0100000	0bxxxxxx	0b00000000100001000000
9	sll	SLLR	R	0110011	001	0000000	xxxxxx	00	0	0	0	000	1	0011	0	000	0	0	0b0110011	0b001	0b0000000	0bxxxxxx	0b00000000100110000000
10	srl	SRLR	R	0110011	101	0000000	xxxxxx	00	0	0	0	000	1	0100	0	000	0	0	0b0110011	0b101	0b0000000	0bxxxxxx	0b00000000101000000000
11	sra	SRAR	R	0110011	101	0100000	xxxxxx	00	0	0	0	000	1	0101	0	000	0	0	0b0110011	0b101	0b0100000	0bxxxxxx	0b00000000101010000000
12	mul	MULR	R	0110011	000	0000001	xxxxxx	00	0	0	0	000	1	0010	0	000	0	0	0b0110011	0b000	0b0000001	0bxxxxxx	0b00000000101010000000
13	slli	SLLI	I	0010011	001	xxxxxxx	000000	00	0	0	0	000	1	0011	0	001	0	0	0b0010011	0b001	0bxxxxxxx	0b000000	0b00000000100111000100
14	srli	SRLI	I	0010011	101	xxxxxxx	000000	00	0	0	0	000	1	0100	0	001	0	0	0b0010011	0b101	0bxxxxxxx	0b000000	0b00000000101000000100
15	srai	SRAI	I	0010011	101	xxxxxxx	010000	00	0	0	0	000	1	0101	0	001	0	0	0b0010011	0b101	0bxxxxxxx	0b010000	0b00000000101010001000
16	lui	LUI	U	0110111	xxx	xxxxxxx	xxxxxx	00	0	0	0	000	1	0000	0	100	0	0	0b0110111	0bxxx	0bxxxxxxx	0bxxxxxx	0b00000000100000010000
17	ld	LD	I	0000011	011	xxxxxxx	xxxxxx	11	0	1	1	000	1	0000	0	001	0	0	0b0000011	0b011	0bxxxxxxx	0bxxxxxx	0b11011000100000000100
18	sd	SD	S	0100011	011	xxxxxxx	xxxxxx	11	1	1	1	000	0	0000	0	010	0	0	0b0100011	0b011	0bxxxxxxx	0bxxxxxx	0b11111000000000001000
19	lw	LW	I	0000011	010	xxxxxxx	xxxxxx	10	0	1	1	000	1	0000	0	001	0	0	0b0000011	0b010	0bxxxxxxx	0bxxxxxx	0b10011000100000000100
20	sw	SW	S	0100011	010	xxxxxxx	xxxxxx	10	1	1	1	000	0	0000	0	010	0	0	0b0100011	0b010	0bxxxxxxx	0bxxxxxx	0b10111000000000001000
21	lb	LB	I	0000011	000	xxxxxxx	xxxxxx	00	0	1	1	000	1	0000	0	001	0	0	0b0000011	0b000	0bxxxxxxx	0bxxxxxx	0b00011000100000000100
22	sb	SB	S	0100011	000	xxxxxxx	xxxxxx	00	1	1	1	000	0	0000	0	010	0	0	0b0100011	0b000	0bxxxxxxx	0bxxxxxx	0b00111000000000001000
23	or	ORR	R	0110011	110	0000000	xxxxxx	00	0	0	0	000	1	0110	0	000	0	0	0b0110011	0b110	0b0000000	0bxxxxxx	0b00000000101100000000
24	and	ANDR	R	0110011	111	0000000	xxxxxx	00	0	0	0	000	1	0111	0	000	0	0	0b0110011	0b111	0b0000000	0bxxxxxx	0b00000000101111000000
25	ori	ORI	I	0010011	110	xxxxxxx	xxxxxx	00	0	0	0	000	1	0110	0	001	0	0	0b0010011	0b110	0bxxxxxxx	0bxxxxxx	0b00000000101110000100
26	andi	ANDI	I	0010011	111	xxxxxxx	xxxxxx	00	0	0	0	000	1	0111	0	001	0	0	0b0010011	0b111	0bxxxxxxx	0bxxxxxx	0b00000000101111000100
27	addiw	ADDIW	I	0011011	000	xxxxxxx	xxxxxx	00	0	0	0	000	1	1000	0	001	0	0	0b0011011	0b000	0bxxxxxxx	0bxxxxxx	0b00000000111000000100