INTEL 8085 INSTRUCTION SET

Table 3.3 Mnemonics, Hex code, Machine cycle and T-state of 8085

Mnemonics	*Hex Code*	*Machine cycle*	*T State*
ACI 8-Bit	CE	2	7
ADC A	8F	1	4
ADC B	88	1	4
ADC C	89	1	4
ADC D	8A	1	4
ADC E	8B	1	4
ADC H	8C	1	4
ADC L	8D	1	4
ADC M	8E	2	7
ADD A	87	1	4
ADD B	80	1	4
ADD C	81	1	4
ADD D	82	1	4
ADD E	83	1	4
ADD H	84	1	4
ADD H	84	1	4
ADD L	85	1	4
ADD M	86	2	7
ADI 8-Bit	C6	2	7
ANA A	A7	1	4
ANA B	A0	1	4
ANA C	A1	1	4
ANA D	A2	1	4
ANA E	A3	1	4
ANA H	A4	1	4
ANA L	A5	1	4
ANA M	A6	2	7
ANI 8-Bit	E6	2	7
CALL 16-Bit	CD	5	18
CC 16-Bit	DC	2 or 5	9 or 18
CM 16-Bit	FC	2	7

Mnemonics	*Hex Code*	*Machine cycle*	*T State*
CPO 16-Bit	E4	2,8	9,21
CZ 16-Bit	CC	2,8	9,21
DAA	27	1	4
DAD B	9	1	3
DAD D	19	1	3
DAD H	29	1	3
DAD SP	39	1	3
DCR A	3D	1	4
DCR B	5	1	4
DCR C	0D	1	4
DCR D	15	1	4
DCR E	1D	1	4
DCR H	25	1	4
DCR L	2D	1	4
DCR M	35	3	10
DCR M	35	3	10
DCX B	0B	1	6
DCX D	1B	1	6
DCX H	2B	1	6
DCX SP	3B	1	6
DI	F3	1	4
EI	FB	1	4
HLT	76	2 or more	5 or more
IN 8-Bit	DB	3	10
INR A	3C	1	4
INR B	4	1	4
INR C	0C	1	4
INR D	14	1	4
INR E	1C	1	4
INR H	24	1	4
INR L	2C	1	4

CMA	2F	1	4
CMC	3F	1	4
CMP A	BF	1	4
CMP B	B8	1	4
CMP C	B9	1	4
CMP D	BA	1	4
CMP E	BB	1	4
CMP H	BC	1	4
CMP L	BD	1	4
CMP M	BE	1	4
CNC 16-Bit	D4	2,5	9,18
CNZ 16-Bit	C4	2,6	9,19
CP 16-Bit	F4	2,7	9,20
CPE 16-Bit	EC	2,8	9,21
CPI 8-Bit	FE	2	7
LDAX B	0A	2	7
LDAX D	1A	2	7
LHLD 16-Bit	2A	5	16
LXI B,16-Bit	1	3	10
LXI D,16-Bit	11	3	10
LXI H,16-Bit	21	3	10
LXI SP,16-Bit	31	3	10
MOV A, A	7F	1	4
MOV A, B	78	1	4
MOV A, C	79	1	4
MOV A, D	7A	1	4
MOV A, E	7B	1	4
MOV A, H	7C	1	4
MOV A, L	7D	1	4
MOV A, M	7E	2	7
MOV B, A	47	1	4
MOV B, B	40	1	4
MOV B, C	41	1	4
MOV B, D	42	1	4
MOV B, E	43	1	4
MOV B, H	44	1	4
MOV B, L	45	1	4
MOV B, M	46	2	7

INR M	34	3	10
INX B	3	1	6
INX D	13	1	6
INX H	23	1	6
INX SP	33	1	6
JC 16-Bit	DA	2,5	7,10
JM 16-Bit	FA	2, 6	7, 11
JMP 16-Bit	C3	3	10
JNZ 16-Bit	D2	2,5	7,10
JNZ 16-Bit	C2	2,6	7,11
JP 16-Bit	F2	2,5	7,10
JPE 16-Bit	EA	2,6	7,11
JPO 16-Bit	E2	2,7	7,12
JZ 16-Bit	CA	2,8	7,13
LDA 16-Bit	3A	4	13
MOV E, M	5E	2	7
MOV H, A	67	1	4
MOV H, B	60	1	4
MOV H, C	61	1	4
MOV H, D	62	1	4
MOV H, E	63	1	4
MOV H, H	64	1	4
MOV H, L	65	1	4
MOV H, M	66	2	7
MOV L, A	6F	1	4
MOV L, B	68	1	4
MOV L, C	69	1	4
MOV L, D	6A	1	4
MOV L, E	6B	1	4
MOV L, H	6C	1	4
MOV L, L	6D	1	4
MOV L, M	6E	2	7
MOV M, A	77	2	7
MOV M, B	70	2	7
MOV M, C	71	2	7
MOV M, D	72	2	7
MOV M, E	73	2	7
MOV M, H	74	2	7

MOV C, A	4F	1	4
MOV C, B	48	1	4
MOV C, C	49	1	4
MOV C, D	4A	1	4
MOV C, E	4B	1	4
MOV C, H	4C	1	4
MOV C, L	4D	1	4
MOV C, M	4E	2	7
MOV D, A	57	1	4
MOV D, B	50	1	4
MOV D, C	51	1	4
MOV D, D	52	1	4
MOV D, E	53	1	4
MOV D, H	54	1	4
MOV D, L	55	1	4
MOV D, M	56	2	7
MOV E, A	5F	1	4
MOV E, B	58	1	4
MOV E, C	59	1	4

MOV M, L	75	2	7
MVI A ,8-Bit	3E	2	7
MVI B, 8-Bit	6	2	7
MVI C, 8-Bit	OE	2	7
MVI D, 8-Bit	16	2	7
MOV E, 8-Bit	1E	2	7
MVI H, 8-Bit	26	2	7
MOV H, A	67	1	4
MVI L, 8-Bit	2E	2	7
MVI M, 8-Bit	36	3	10
NOP	0	1	4
ORA A	B7	1	4
ORA B	B0	1	4
ORA C	B1	1	4
ORA D	B2	1	4
ORA E	B3	1	4
ORA H	B4	1	4
ORA L	B5	1	4
ORA M	B6	2	7

MOV E, D	5A	1	4
MOV E, E	5B	1	4
MOV E, H	5C	1	4
MOV E, L	5D	1	4
POP D	D1	3	10
POP H	E1	3	10
POP PSW	F1	3	10
PUSH B	C5	3	12
PUSH D	D5	3	12
PUSH H	E5	3	12
PUSH PSW	F5	3	12
RAL	17	1	4
RAR	1F	1	4
RC	D8	1	4
RM	F8	1,3	6,12
RNC	D0	1,3	6,12
RNC	C0	1,3	6,12
RP	F0	1,3	6,12
RPE	E8	1,3	6,12

ORI 8-Bit	F6	2	7
OUT 8-Bit	D3	3	10
PCHL	E9	1	6
POP B	C1	3	10
SUB C	91	1	4
SUB D	92	1	4
SUB E	93	1	4
SUB H	94	1	4
SBI 8-Bit	DE	2	7
SHLD 16-Bit	22	3	16
SIM	30	1	4
SPHL	F9	1	6
STA 16-Bit	32	4	13
STAX B	2	2	7
STAX D	12	2	7
STC	37	1	4
SUB A	97	1	4
SUB B	90	1	4
STAX B	2	2	7

RPO	E0	1,3	6,12
RRC	0F	1	4
RST 0	C7	3	12
RST 1	CF	3	12
RST 2	D7	3	12
RST 3	DF	3	12
RST 4	E7	3	12
RST 5	EF	3	12
RST 6	F7	3	12
RST 7	FF	3	12
RZ	C8	1,3	6,12
SBB A	9F	1	4
SBB B	98	1	4
SBB C	99	1	4
SBB D	9A	1	4
SBB E	9B	1	4
SBB H	9C	1	4
SBB L	9D	1	4
SBB M	9E	2	7
SBI 8-Bit	DE	2	7
SHLD 16-Bit	22	3	16
SIM	30	1	4

STAX D	12	2	7
STC	37	1	4
SUB A	97	1	4
SUB B	90	1	4
SUB C	91	1	4
SUB D	92	1	4
SUB E	93	1	4
SUB H	94	1	4
SUB L	95	1	4
SUB M	96	2	7
SUI 16-Bit	D6	2	7
XCHG	EB	1	4
XRA A	AF	1	4
XRA B	A8	1	4
XRA C	A9	1	4
XRA D	AA	1	4
XRA E	AB	1	4
XRA H	AC	1	4
XRA L	AD	1	4
XRA M	AE	2	7
XRI 8-Bit	EE	2	7
XTHL	E3	5	16