8085 Instruction Summary

Hex	Mnemonic	Hex	Mnemonic	Hex	Mnemonic	Hex	Mnemonic
00	NOP	11	LXI D	21	LXI H	31	LXI SP
01	LXI B	12	STAX D	22	SHLD	32	STA
02	STAX B	13	INX D	23	INX H	33	INX SP
03	INX B	14	INR D	24	INR H	34	INR M
04	INR B	15	DCR D	25	DCR H	35	DCR M
05	DCR B	16	MVI D	26	MVI H	36	MVI M
06	MVI B	17	RAL	27	DAA	37	STC
07	RLC	19	DAD D	29	DAD H	39	DAD SP
09	DAD B	1A	LDAX D	2A	LHLD	3A	LDA
0A	LDAX B	1B	DCX D	2B	DCX H	3B	DCX SP
0B	DCX B	1C	INR E	2C	INR L	3C	INR A
0C	INR C	1D	DCR E	2D	DCR L	3D	DCR A
0D	DCR C	1E	MVI E	2E	MVI L	3E	MVI A
0E	MVI C	1F	RAR	2F	CMA	3F	CMC
0F	RRC	20	RIM	30	SIM	40	MOV B,B

Hex	Mnemonic	Hex	Mnemonic	Hex	Mnemonic	Hex	
Mnemonic							
41	MOV B,C	70	MOV M,B	9F	SBB A	CF	RST 1
42	MOV B,D	71	MOV M,C	A0	ANA B	D0	RNC
43	MOV B,E	72	MOV M,D	A1	ANA C	D1	POP D
44	MOV B,H	73	MOV M,E	A2	ANA D	D2	JNC
45	MOV B,L	74	MOV M,H	A3	ANA E	D3	OUT
46	MOV B,M	75	MOV M,L	A4	ANA H	D4	CNC
47	MOV B,A	76	HLT	A5	ANA L	D5	PUSH D
48	MOV C,B	77	MOV M,A	A6	ANA M	D6	SUI
49	MOV C,C	78	MOV A,B	A7	ANA A	D7	RST 2
4A	MOV C,D	79	MOV A,C	A8	XRA B	D8	RC
4B	MOV C,E	7A	MOV A,D	A9	XRA C	DA	JC
4C	MOV C,H	7B	MOV A,E	AA	XRA D	DB	IN
4D	MOV C,L	7C	MOV A,H	AB	XRA E	DC	CC
4E	MOV C,M	7D	MOV A,L	AC	XRA H	DE	SBI
4F	MOV C,A	7E	MOV A,M	AD	XRA L	DF	RST 3
50	MOV D,B	7F	MOV A,A	AE	XRA M	E0	RPO
51	MOV D,C	80	ADD B	AF	XRA A	E1	POP H
52	MOV D,D	81	ADD C	B0	ORA B	E2	JPO
53	MOV D,E	82	ADD D	B1	ORA C	E3	XTHL
54	MOV D,H	83	ADD E	B2	ORA D	E4	CPO
55	MOV D,L	84	ADD H	B3	ORA E	E5	PUSH H
56	MOV D,M	85	ADD L	B4	ORA H	E6	ANI
57	MOV D,A	86	ADD M	B5	ORA L	E7	RST 4
58	MOV E,B	87	ADD A	B6	ORA M	E8	RPE
59	MOV E,C	88	ADC B	B7	ORA A	E9	PCHL
5A	MOV E,D	89	ADC C	B8	CMP B	EA	JPE
5B	MOV E,E	8A	ADC D	B9	CMP C	EB	XCHG
5C	MOV E,H	8B	ADC E	BA	CMP D	EC	CPE
5D	MOV E,L	8C	ADC H	BB	CMP E	EE	XRI
5E	MOV EM	8D	ADC L	BC	CMP H	EF	RST 5
5F	MOV EA	8E	ADC M	BD	CMP L	F0	RP
60	MOV H,B	8F	ADC A	BE	CMP M	F1	POP PSW
61	MOV H,C	90	SUB B	BF	CMP A	F2	JP
62	MOV H,D	91	SUB C	C0	RNZ	F3	DI
63	MOV H,E	92	SUB D	C1	POP B	F4	CP
64	MOV H,H	93	SUB E	C2	JNZ	F5	PUSH PSW
65	MOV H,L	94	SUB H	C3	JMP	F6	ORI
66	MOV H,M	95	SUB L	C4	CNZ	F7	RST 6
67	MOV H,A	96	SUB M	C5	PUSH B	F8	RM
68	MOV L,B	97	SUB A	C6	ADI	F9	SPHL
69	MOV L,C	98	SBB B	C7	RST 0	FA	JM
6A	MOV L,D	99	SBB C	C8	RZ	FB	EI
6B	MOV L,E	9A	SBB D	C9	RET	FC	CM
6C	MOV L,H	9B	SBB E	CA	JZ	FE	CPI
6D	MOV L,L	9C	SBB H	CC	CZ	FF	RST 7
6E	MOV L,M	9D	SBB L	CD	CALL		
6F	MOV L,A	9E	SBB M	CE	ACI		

DATA TRANSFER GROUP

Move

MOV	A,A	7F
	A,B	78
	A,C	79
	A,D	7A
	A,E	7B
	A,H	7C
	A,L	7D
	A,M	7E
MOV	B,A	47
	B,B	40
	B,C	41
	B,D	42
	B,E	43
	B,H	44
	B,L	45
	B,M	46
MOV	C,A	4F
	C,B	48
	C,C	49
	C,D	4A
	C,E	4B
	C,H	4C
	C,L	4D
	C,M	4E
MOV	D,A	57
	D,B	50
	D,C	51
	D,D	52
	D,E	53
	D,H	54
	D,L	55
	D,M	56

Move (cont)

MOV	E,A	5F
	E,B	58
	E,C	59
	E,D	5A
	E,E	5B
	E,H	5C
	E,L	5D
	E,M	5E
MOV	H,A	67
	H,B	60
	H,C	61
	H,D	62
	H,E	63
	H,H	64
	H,L	65
	H,M	66
MOV	L,A	6F
	L,B	68
	L,C	69
	L,D	6A
	L,E	6B
	L,H	6C
	L,L	6D
	L,M	6E
MOV	M,A	77
	M,B	70
	M,C	71
	M,D	72
	M,E	73
	M,H	74
	M,L	75
XCHG		EB

Move Immediate

MVI	A, byte	3E
	B, byte	06
	C, byte	0E
	D, byte	16
	E, byte	1E
	H, byte	26
	L, byte	2E
	M, byte	36

Load Immediate

LXI	B, dble	01
	D, dble	11
	H, dble	21
	SP, dble	31

Load/Store

LDAX B	0A
LDAX D	1A
LHLD adr	2A
LDA adr	3A
STAX B	02
STAX D	12
SHLD adr	22
STA adr	32

byte = constant, or logical/arithmetic expression that evaluates to an 8-bit data quantity. (Second byte of 2-byte instructions).

dble = constant, or logical/arithmetic expression that evaluates to a 16-bit data quantity. (Second and Third bytes of 3-byte instructions).

adr = 16-bit address (Second and Third bytes of 3-byte instructions).

* = all flags (C, Z, S, P, AC) affected.

** = all flags except CARRY affected; (exception: INX and DCX affect no flags).

† = only CARRY affected.

ARITHMETIC AND LOGICAL GROUP

Add*

ADD	A	87
	B	80
	C	81
	D	82
	E	83
	H	84
	L	85
	M	86
ADC	A	8F
	B	88
	C	89
	D	8A
	E	8B
	H	8C
	L	8D
	M	8E

Subtract*

SUB	A	97
	B	90
	C	91
	D	92
	E	93
	H	94
	L	95
	M	96
SBB	A	9F
	B	98
	C	99
	D	9A
	E	9B
	H	9C
	L	9D
	M	9E

Double Add †

DAD	B	09
	D	19
	H	29
	SP	39

Increment**

INR	A	3C
	B	04
	C	0C
	D	14
	E	1C
	H	24
	L	2C
	M	34
INX	B	03
	D	13
	H	23
	SP	33

Decrement**

DCR	A	3D
	B	05
	C	0D
	D	15
	E	1D
	H	25
	L	2D
	M	35
DCX	B	0B
	D	1B
	H	2B
	SP	3B

Specials

DAA*	27
CMA	2F
STC†	37
CMC†	3F

Rotate †

RLC	07
RRC	0F
RAL	17
RAR	1F

Logical*

ANA	A	A7
	B	A0
	C	A1
	D	A2
	E	A3
	H	A4
	L	A5
	M	A6
XRA	A	AF
	B	A8
	C	A9
	D	AA
	E	AB
	H	AC
	L	AD
	M	AE
ORA	A	B7
	B	B0
	C	B1
	D	B2
	E	B3
	H	B4
	L	B5
	M	B6
CMP	A	BF
	B	B8
	C	B9
	D	BA
	E	BB
	H	BC
	L	BD
	M	BE

Arith & Logical Immediate

ADI byte	C6
ACI byte	CE
SUI byte	D6
SBI byte	DE
ANI byte	E6
XRI byte	EE
ORI byte	F6
CPI byte	FE