Mnemonic	Desctiption	Example	Parameters	Flags affected
ADC r	Add register r and the carry flag to the Accumulator A.	ADC B	'r': (HL) (IX+#) (IY+#) A B C D E H L IXH IXL IYH IYL	SZHVNC
ADC A,# ADC HL,rr	Add 8 bit number # and the carry to A. Add 16 bit register rr and the carry to HL.	ADC 128 ADC HL,BC	'#': 0-255 (\$00-\$FF) 'rr': BC DE HL SP	S Z H V N C S Z H V N C
	Add 16 bit register rr1 to 16 bit register rr2.	ADD HL,BC	'r1': HL IX IY 'r2': BC DE SP *HL IX IY*	H - N C
ADD r	Adds 8 bit register r to A.	ADD B	'r': (HL) (IX+#) (IY+#) A B C D E H L IXH IXL IYH IYL	SZHVNC
ADD # AND r	Adds 8 bit value # to A. Logical AND of bits in register r with Accumulator A.	ADD B AND B	'#': 0-255 (\$00-\$FF) 'r': (HL) (IX+#) (IY+#) A B C D E H L IXH IXL IYH IYL	S Z H V N C S Z H V N C
AND #	Logical AND of bits in 8 bit value # with Accumulator A.	AND \$64	'#': 0-255 (\$00-\$FF)	SZHVNC
BIT b,r	Test bit b from 8 bit register r and set the Z flag to that bit.	BIT 7,B	'b': 0-7 (%76543210) 'r': (HL) (IX+#) (IY+#) A B C D E H L	s Z H v N -
	Call Subroutine at address addr  Call Subroutine at address addr only IF condition c is true.	CALL \$1000 CALL Z,\$1000	'addr': 0-65535 (\$0000-\$FFFF) 'addr': 0-85535 (\$0000-\$FFFF) 'c': c m ncn p po pe z	
CCF	Complement the Carry Flag. C flag will inverted	CCF		H - N C
CP r	Compare the Accumulator to register r.	CP B	'r': (HL) (IX+#) (IY+#) A B C D E H L	SZHVNC
CP # CPD	Compare the Accumulator to 8 bit immediate value #.  Compare A to the byte at address HL and decrease HL and BC.	CP 32 CPD	'#':0-255 (\$00-\$FF)	SZHVNC SZHVN-
CPDR	Compare A to the byte at address HL and Decrease and Repeat	CPDR		SZHVN-
CPI CPIR	Compare A to the byte at address HL and increase HL but decrease BC (Bytecount).  Compare A to the byte at addr HL and inc HL dec BC (Bytecount) and Rep until match or BC=0.	CPI CPIR		SZHVN- SZHVN-
CPL	Invert all bits of A (this is known as 'One's Complement').	CPL		H - N -
DAA	Decimal Adjust Accumulator (Binary Coded Decimal)	DAA		SZHV-C
DEC r DEC rr	Decrease value in 8 bit register r by one.  Decrease value in 16 bit register rr by one.	DEC B DEC HL	'r': (HL) (IX+#) (IY+#) A B C D E H L IXH IXL IYH IYL Valid registers for 'rr': BC DE HL IX IY SP	SZHVN-
DI	Disable Maskable Interrupts	DI	·	
DJNZ ofst El	Decrease B and Jump if NonZero to address offset #.  Enable Maskable Interrupts.	DJNZ label El	'ofst': -128 to +127	
EX (SP),HL	Exchange HL with the top item of the stack	EX (SP),HL		
EX AF,AF'	Exchange the Accumulator and Flags with the shadow Accumulator and Flags.	EX AF,AF'		SZHVNC
EX DE,HL EXX	Exchange HL and DE Exchange the registers BC, DE and HL with the shadow registers	EX DE,HL EXX		
HALT	Stop the CPU until an interrupt occurs.	HALT		
IM0	Enable Interrupt mode 0.	IM0		
IM1 IM2	Enable Interrupt mode 1. Enable Interrupt mode 2.	IM1 IM2		
IN A,(#)	Read in an 8 bit byte A from 8 bit port #.	IN A,(\$10)	#': 0-255 (\$00-\$FF)	SZHVN-
IN r,(C)	Read in an 8 bit byte into register r from port (C)	IN A,(C)	': A B C D E H L	SZHVN-
INC r	Increase value in 8 bit register r by one.  Increase value in 16 bit register r by one.	INC B INC HL	'r': (HL) (IX+#) (IY+#) A B C D E H L IXH IXL IYH IYL 'rr': BC DE HL IX IY SP	SZHVN-
IND	Read a byte IN from port (C) and save to address in HL, then Decrease HL and B.	IND		sZhvN-
INDR INI	Read a byte IN from port (C) and save to address in HL. then Decrease HL and B, rep until B=0. Read a byte IN from port (C) and save to address in HL, then increase HL and decrease B.	INDR INI		s Z h v N - s Z h v N -
INIR	Read a byte IN from port (C) and save to address in HL, then increase HL and decrease B.  Read a byte IN from port (C) and save to the address in HL, inc HL and dec B, rep until B=0.	INIR		sZhvN-
JP (HL)	Jump to the address in register HL.	JP (HL)		
JP addr	Jump to the 16 bit address addr.	JP \$4000	'addr': 0-65535 (\$0000-\$FFFF) 'addr': 0-65535 (\$0000-\$FFFF)	
JP c,addr JR ofst	Jump to the 16 bit address addr only IF condition c is true in the flags register.  Jump to the 8 bit offset #.	JP Z,\$4000 JR TestLabel	'c' c m nc nz p po pe z '#': -128 to +127	
JR c,ofst	Jump to the 8 bit offset ofst IF condition c is true.	JR Z,TestLabel		
LD (rr),A	Load the 8 bit value in the Accumulator into the address in register rr.	LD (DE),A	'rr': BC DE HL IX+# IY SP	
	Load the 8 bit value in register r into the address in register rr.  Load the 8 bit value in the Accumulator into memory address addr.	LD (HL),B LD (\$C000),A	Y: A B C D E H L Yr: HL IX+# IY+# 'addr': 0-65535 (\$0000-\$FFFF)	
	Load the 6 bit value in register pair rr into memory address addr.	LD (\$C000),A	Indian opens (access opens)	
LD A,(rr)	Load the 8 bit value from the address in register rr into the Accumulator.	LD A,(DE)	'rr': BC DE HL IX+# IY SP	
.,	Load the 8 bit value from memory address addr into the Accumulator.	LD A,(\$C000)	'##': 0-65535 (\$0000-\$FFFF) Y: A B C D E H L IXH IXL IYH IYL	
LD r,# LD A,I	Load the 8 bit register r with value #.  Load the 8 bit value from the I register to the Accumulator.	LD B,32 LD A,I	#: 0-255 (\$00-\$FF)	SZHVN-
LD A,R	Load the 8 bit value from the R register to the Accumulator.	LD A,R		SZHVN-
	Load the 16 bit register pair rr from memory address addr.	LD BC,(\$C000)	'm': BC DE HL IX IY SP 'addr': 0-65535 (\$0000-\$FFFF) 'm': BC DE HL IX IY SP	
LD rr,#### LD I,A	Load the 16 bit register pair rr with immediate value #### Load the 8 bit value from the Accumulator into the I register.	LD BC,\$C000 LD I,A	'addr': 0-65535 (\$0000-\$FFFF)	
	Load the R register with the 8 bit value in the Accumulator.	LD I,A LD R,A		
LD SP,HL	Load the 16 bit Stack Pointer register SP with the value in HL.	LD SP,HL		
	Load the 8 bit register r1 from register r2.  Load the 8 bit register r from the address in register rr.	LD H,B	'r1' and 'r2': A B C D E H L IXH IXL IYH IYL Y: ABCDEHL Y: HLIXHBIYH	
LD r,(rr) LDD	Load the 8 bit register r from the address in register rr.  Load and Decrement. Copies bytes down from HL to DE with BC as a byte count.	LD B,(HL) LDD	'rr': HL IX+# IY+#	HVN-
LDDR	Load, Decrement and Repeat. Copies bytes down from HL to DE with BC as a Byte count	LDDR		H V N -
LDI LDIR	Load and Increment. Copies bytes upwards from HL to DE with BC as a byte count	LDI		H V N -
NEG	Load, Decrement and Repeat. Copies bytes upwards from HL to DE with BC as byte count Negate the 8 bit value in the accumulator (Two's Complement of the number).	LDIR NEG		HVN- SZHVNC
NOP	No Operation. This command has no effect on any registers or memory.	NOP		
OR r OR #	Logical OR of bits in register r with Accumulator A.  Logical OR of bits in 8 bit value # with Accumulator A.	OR B OR \$64	'r': (HL) (IX+#) (IY+#) A B C D E H L IXH IXL IYH IYL '#': 0-255 (\$00-\$FF)	S Z H V N C S Z H V N C
OK# OTDR	Out Decrement Repeat. Transfers B bytes from HL to port (C) moving downwards.	OR \$64 OTDR	# . U-200 (QUU-QLL)	sZhvNC
OTIR	Out Increment Repeat. This command transfers B bytes from HL to port (C) moving upwards.	OTIR	W 0 0FF (000 0FF)	sZhvN-
OUT (#),A OUT (C),r	Output an 8 bit byte from A to 8 bit port #.  On a system with 8 bit ports, this will output an 8 bit byte from register r to port (C).	OUT (\$10),A OUT (C),r	'#': 0-255 (\$00-\$FF) 'r': A B C D E H L	
OUT (C),0	On a system with 8 bit ports, this will output an 8 bit byte zero to port (C).	OUT (C),0		
OUTD	Out and Decrement. This command transfers a byte from HL to port (C) moving downwards.	OUTD		sZhvN-
OUTI POP rr	Out and Increment. This command transfers a byte from HL to port (C) moving upwards.  Pop a pair of bytes off the stack into 16 bit register rr.	OUTI POP AF	'rr': AF BC DE HL IX IY	s Z h v N - all if AF / none
PUSH rr	Push a pair of bytes from 16 bit register rr onto the top of the stack.	PUSH AF	'rr': AF BC DE HL IX IY	
RES b,r	Reset bit b from 8 bit register r to 0.	RES 7,B	"b": 0-7 (%76543210) "f": (HL) (IX+#) (IY+#) A B C D E H L	
RET c	Return from a subroutine.  Return from a subroutine only if condition c is true.	RET Z	'c': c m nc nz p po pe z	
RETI	Return from an interrupt.	RETI	5. 5.11 116 112 p po po 2	
RETN	Return from a non maskable interrupt (NMI).	RETN	W. (III.) (IV. (IV. (IV. A. D. O. D. E. U.)	CZUDNO
RL r RLC r	Rotate bits in register r Left with Carry.  Rotate bits in register r Left and Copy the top bit to the Carry.	RL B RLC B	'r': (HL) (IX+#) (IY+#) A B C D E H L 'r': (HL) (IX+#) (IY+#) A B C D E H L	SZHPNC SZHPNC
RLD	Rotate Left for binary coded Decimal.	RLD		SZHVN-
RR r	Rotate bits in register r Right with carry.	RR B	'r': (HL) (IX+#) (IY+#) A B C D E H L	SZHPNC
RRC r RRD	Rotate bits in register r Right and Copy the bottom bit to the Carry.  Rotate Right for binary coded Decimal.	RLC B RRD	'r': (HL) (IX+#) (IY+#) A B C D E H L	SZHPNC SZHVN-
RST#	ReSeT function. RST is a single byte call to \$00xx address.	RST \$38		
SBC r	Subtract register r and the carry flag from the Accumulator A.	SBC B	'r': (HL) (IX+#) (IY+#) A B C D E H L IXH IXL IYH IYL	SZHVNC
SBC A,# SBC HL,rr	Subtract 8 bit number # and the carry from A. Subtract 16 bit register rr and the carry from HL.	SBC 128 SBC HL,BC	'#': 0-255 (\$00-\$FF) 'rr': BC DE HL SP	S Z H V N C S Z H V N C
SCF	Set the carry flag to 1.	SCF		H - N C
SET b,r	Set bit b from 8 bit register r to 1.	SET 7,B	'b': 0-7 (%76543210) 'Y': (HL) (IX+#) (IY+#) A B C D E H L	
	Shift the bits register r Left for Arithmetic. Shift the bits in register r Left Logically (for unsigned numbers).	SLA A SLL A	'r': (HL) (IX+#) (IY+#) A B C D E H L 'r': (HL) (IX+#) (IY+#) A B C D E H L	SZHPNC SZHPNC
	Office the pita in register refer bouldaily (for unsturied fluttibers).		'r': (HL) (IX+#) (IY+#) A B C D E H L	SZHPNC
SLL r	Shift the bits in register r Right for Arithmetic. '	SRA A		
SLA r SLL r SRA r SRL r	Shift the bits in register r Right for Arithmetic.  Shift the bits in register r Right Logically.	SRL A	'r': (HL) (IX+#) (IY+#) A B C D E H L	SZHPNC
SLL r SRA r SRL r SUB r	Shift the bits in register r Right for Arithmetic.  Shift the bits in register r Right Logically. Subtract 8 bit register r from A.	SRL A SUB B	'r': (HL) (IX+#) (IY+#) A B C D E H L 'r': (HL) (IX+#) (IY+#) A B C D E H L IXH IXL IYH IYL	SZHPNC SZHVNC
SLL r SRA r	Shift the bits in register r Right for Arithmetic.  Shift the bits in register r Right Logically.	SRL A	'r': (HL) (IX+#) (IY+#) A B C D E H L	SZHPNC

Instruction ADC A,(HL) ADC A,(IX+d) ADC A,(IY+d) ADC A,A ADC A,B ADC A,C ADC A,D	Opcodes 8E DD 8E d FD 8E d 8F 88 89 8A	B/T 1/7 3/19 3/19 1/4 1/4 1/4	Flags - z v c - z v c - z v c - z v c - z v c - z v c - z v c - z v c - z v c - z v c	Instruction CALL addr CALL c,addr CALL m,addr CALL nc,addr CALL nz,addr CALL p,addr CALL po,addr	Opcodes CD dr ad DC dr ad FC dr ad D4 dr ad C4 dr ad C4 dr ad E4 dr ad E4 dr ad	B/T 3/17/20 3/11790 1220 3/11790 1220 3/11790 1220 3/11790 1220 3/11790 1220	Flags	Instruction LD (IY+d),A LD (IY+d),B LD (IY+d),C LD (IY+d),C LD (IY+d),E LD (IY+d),H LD (IY+d),L	Opcodes FD 77 d FD 70 d FD 71 d FD 72 d FD 73 d FD 74 d FD 75 d	B/T 3/19 3/19 3/19 3/19 3/19 3/19	Flags	Instruction LD IXL,A LD IXL,B LD IXL,C LD IXL,D LD IXL,E LD IXL,IXH LD IXL,IXH	Opcodes DD 6F DD 68 DD 69 DD 6A DD 6B DD 6C DD 6D	B/T 2/8 2/8 2/8 2/8 2/8 2/8 2/8	Flags	Instruction RES 7,(HL) RES 7,(IX+d) RES 7,(IY+d) RES 7,A RES 7,B RES 7,C RES 7,D	Opcodes CB BE DD CB d BE FD CB d BE CB BF CB B8 CB B9 CB BA	B/T 2/15 4/23 4/23 2/8 2/8 2/8 2/8	Flags	Instruction SET 4.(HL) SET 4.(IX+d) SET 4.(IY+d) SET 4.A SET 4.B SET 4.C SET 4.D	DD CB d E6	B/T Flags 2/15 4/23 2/8 2/8 2/8 2/8
ADC A,E ADC A,H ADC A,IXH ADC A,IYH ADC A,L ADC A,IXL ADC A,IYL	8B 8C DD 8C FD 8C 8D DD 8D FD 8D	1/4 1/4 2/8 2/8 1/4 2/8 2/8	- Z V C - Z V C	CALL pe,addr CALL z,addr CCF CP (HL) CP (IX+d) CP (IY+d) CP A	EC dr ad CC dr ad 3F BE DD BE d FD BE d BF	3/17710 1220 3/17710 1220 1/4 1/7 3/19 3/19 1/4	X -= v < -= v < -= v <	LD (IY+d),n LD A,(addr) LD A,(BC) LD A,(DE) LD A,(HL) LD A,(IX+d)	FD 36 d n 3A dr ad / F/A dr ad 0A 1A 7E	4/19 3/16 1/78 1/78 1/78		LD IXL,n LD IYL,A LD IYL,B LD IYL,C LD IYL,D LD IYL,D LD IYL,E LD IYL,IYH	DD 2E n FD 6F FD 68 FD 69 FD 6A FD 6B FD 6C	3/11 2/8 2/8 2/8 2/8 2/8 2/8 2/8		RES 7,E RES 7,H RES 7,L RET RET C RET M RET NC	CB BB CB BC CB BD C9 D8 F8 D0	2/8 2/8 2/8 1/10 12 1/t118 8/16 1/t118 8/16		SET 4,E SET 4,H SET 4,L SET 5,(HL) SET 5,(IX+d)	CB E3 CB E4 CB E5 CB EE DD CB d EE	2/8 2/8 2/15 4/23 4/23 2/8
ADC A,n ADC HL,BC ADC HL,DE ADC HL,HL ADC HL,SP ADD A,(HL) ADD A,(IX+d) ADD A,(IY+d)	CE n ED 4A ED 5A ED 6A ED 7A 86 DD 86 d FD 86 d	2/7 2/15 2/15 2/15 2/15 1/7 3/19 3/19	- Z V C - Z V C	CPB CPC CPD CPE CPH CPIXH CPIYH CPL	B8 B9 BA BB BC DD BC FD BC	1/4 1/4 1/4 1/4 1/4 2/8 2/8	-= v < -= v < -= v < -= v < -= v < -= v <	LD A,(IY+d) LD A,A LD A,B LD A,C LD A,D LD A,E LD A,H LD A,IXH	FD 7E d 7F 78 79 7A 7B 7C DD 7C	3/19 1/4 1/4 1/4 1/4 1/4 1/4 2/8		LD IYL,IYL LD IYL,n LD R,A LD SP,(addr) LD SP,hilo LD SP,HL LD SP,IX LD SP,IY	FD 6D FD 2En ED 4F ED 7B dr ad 31 lo hi F9 DD F9 FD F9	2/8 3/11 2/9 4/20 3/10 1/6 2/10 2/10		RET NZ RET P RET PE RET PO RET Z RETI RETN RL (HL)	C0 F0 E8 E0 C8 ED 4D / D9 ED 45 CB 16	1/f118 8/16 1/f118 8/16 1/f118 8/16 1/f118 8/16 1/f118 8/16 1/f1 18 8/16 1/8 2/14 2/15		SET 5,B SET 5,C SET 5,D SET 5,E SET 5,H SET 5,L SET 6,(HL) SET 6,(IX+d)		2/8 2/8 2/8 2/8 2/8 2/8 4/23
ADD A,A ADD A,B ADD A,C ADD A,D ADD A,E ADD A,H ADD A,IXH	87 80 81 82 83 84 DD 84	1/4 1/4 1/4 1/4 1/4 1/4 1/4 2/8	- Z V C - Z V C	CP IXL CP IYL CP n CPD CPDR CPI CPI CPI	DD BD FD BD FE n ED A9 ED B9 ED A1 ED B2	2 / 8 2 / 8 2 / 7 2 / 16 2 / =16#21 2 / 16 2 / =16#21	-= v < -= v < -= v < ? - BC - ? - BC - ? - BC -	LD A,IYH LD A,I LD A,L LD A,IXL LD A,IXL LD A,IYL LD A, (\$FF00+n)	FD 7C ED 57 7D DD 7D FD 7D 3E n	2/8 2/9 1/4 2/8 2/8 2/78 2/12	- z i -	LDD LDDR LDI A,(HL) LDI (HL),A LDD A,(HL) LDD (HL),A LDI	ED A8 ED B8 2A 22 32 3A ED A0	2/16 2/z16nz21 2/8 2/8 2/8 2/8 2/8 2/16	BC -	RL (IX+d) RL (IY+d) RL A RL B RL C RL D RL E	DD CB d 16 FD CB d 16 CB 17 CB 10 CB 11 CB 12 CB 13	4/23 4/23 2/8 2/8 2/8 2/8 2/8	- z p r7 - z p r7	SET 6,(IX+d) SET 6,A SET 6,B SET 6,C SET 6,D SET 6,E SET 6,H		4/23 2/8 2/8 2/8 2/8 2/8
ADD A,IYH ADD A,L ADD A,IXL ADD A,IYL ADD A,n ADD HL,BC ADD HL,DE	FD 84 85 DD 85 FD 85 C6 n 09	2/8 1/4 2/8 2/8 2/7 1/11 1/11	- Z V C - Z V C - Z V C - Z V C - Z V C C	CPL DAA DEC (HL) DEC (IX+d) DEC (IY+d) DEC A DEC B	2F 27 35 DD 35d FD 35d 3D 5	1/4 1/4 1/11 3/23 3/23 1/4 1/4	- Z P C - Z V - - Z V - - Z V - - Z V - - Z V -	LD A,(\$FF00+C) LD A,R LD B,(HL) LD B,(IX+d) LD B,(IY+d) LD B,A LD B,B	F2 ED 5F 46 DD 46 d FD 46 d 47 40	1/8 2/9 1/7 3/19 3/19 1/4 1/4	- z i -	LDIR NEG NOP OR (HL) OR (IX+d) OR (IY+d) OR A	ED B0 ED 44 0 B6 DD B6 d FD B6 d	2/28 1/4 1/7 3/19 3/19 1/4	- z A80 A0 - z P - - z p - - z p - - z p - - z p -	RL H RL L RLA RLC (HL) RLC (IX+d) RLC (IY+d) RLC A	CB 14 CB 15 17 CB 06 DD CB d 06 FD CB d 06 CB 07	2/8 2/8 1/4 2/15 4/23 4/23 2/8	- z p r7 - z p r7 r7 - z p r7 - z p r7 - z p r7 - z p r7	SET 7,(IY+d) SET 7,A SET 7,B SET 7,C	DD CB d FE FD CB d FE CB FF CB F8 CB F9	2/8 2/15 4/23 4/23 2/8 2/8
ADD HL,HL ADD HL,SP ADD IX,BC ADD IX,IX ADD IX,IX ADD IX,SP ADD IY,BC ADD IY,DE	29 39 DD 09 DD 19 DD 29 DD 39 FD 09 FD 19	1/11 1/11 2/15 2/15 2/15 2/15 2/15 2/15	C C C C C	DEC BC DEC C DEC D DEC DE DEC E DEC H DEC IXH DEC IYH	0B 0D 15 1B 1D 25 DD 25 FD 25	1/6 1/4 1/4 1/6 1/4 1/4 2/8 2/8	BUG - Z V Z V BUG - Z V Z V Z V Z V -	LD B,C LD B,D LD B,E LD B,H LD B,IXH LD B,IYH LD B,L LD B,IXL	41 42 43 44 DD 44 FD 44 45 DD 45	1/4 1/4 1/4 1/4 2/8 2/8 1/4 2/8		OR B OR C OR D OR E OR H OR IXH OR IYH OR L	B0 B1 B2 B3 B4 DD B4 FD B4 B5	1/4 1/4 1/4 1/4 1/4 2/8 2/8 1/4	- z p - - z p -	RLC B RLC C RLC D RLC E RLC H RLC L RLCA RLD	CB 00 CB 01 CB 02 CB 03 CB 04 CB 05 7 ED 6F	2/8 2/8 2/8 2/8 2/8 2/8 1/4 2/18	- z p r7 - z p r7 r7 - z p -	SET 7,D SET 7,E SET 7,H SET 7,L SLA (HL) SLA (IX+d) SLA (IY+d) SLA A	DD CB d 26	2/8 2/8 2/8 2/15 -zpr7 4/23 -zpr7 4/23 -zpr7 2/8 -zpr7
ADD IY,IY ADD IY,SP ADD SP,n AND (HL) AND (IX+d) AND (IY+d) AND A AND B	FD 29 FD 39 E8 n A6 DD A6 d FD A6 d A7	2/15 2/15 1/16 1/7 3/19 3/19 1/4 1/4	C C N Z V C - Z P C	DEC HL DEC IX DEC IY DEC L DEC IXL DEC IYL DEC SP DI	2B DD 2B FD 2B 2D DD 2D FD 2D 3B F3	1/6 2/10 12 2/10 12 1/4 2/8 2/8 1/6 1/4	BUG  - Z V - - Z V - - Z V -	LD B,IYL LD B,n LD BC,(addr) LD BC,hilo LD C,(HL) LD C,(IX+d) LD C,(IY+d) LD C,A	FD 45 06 n ED 4B dr ad 01 lo hi 4E DD 4E d DD 4E d	2/8 2/78 4/20 3/1012 1/7 3/19 3/19 1/4		OR IXL OR IYL OR n OTDR OTIR OUT (C),A OUT (C),B OUT (C),C	ED 41	2/8 2/8 2/7 2/z16nz21 2/z16nz21 2/12 16 2/12 16 2/12 16	- z p - - z p - - z p - ? - ? - ? ! ? -	RR (HL) RR (IX+d) RR (IY+d) RR A RR B RR C RR D RR E	CB 1E DD CB d 1E FD CB d 1E CB 1F CB 18 CB 19 CB 1A CB 1B	2/15 4/23 4/23 2/8 2/8 2/8 2/8 2/8 2/8	- z p r0 - z p r0	SLAB SLAC SLAD SLAE SLAH SLAL SLL (HL) SLL (IX+d)		2/8 - z p r7 2/8 - z p r7 2/15 - z p r7 4/23 - z p r7
AND C AND D AND E AND H AND IXH AND IYH AND L AND IXL	A1 A2 A3 A4 DD A4 FD A4 A5	1/4 1/4 1/4 1/4 2/8 2/8 1/4 2/8	- z p c - z p c - z p c - z p c - z v c	DJNZ d EI EX (SP),HL EX (SP),IX EX (SP),IY EX AF,AF' EX DE,HL FXX	10 d FB E3 DD E3 FD E3 8 EB	2/t13f8 1/4 1/19 2/23 2/23 1/4 1/4	s' z' p' c'	LD C,B LD C,C LD C,D LD C,E LD C,H LD C,IXH LD C,IYH LD C,L	48 49 4A 4B 4C DD 4C FD 4C	1/4 1/1 1/1 1/4 1/4 2/8 2/8		OUT (C),D OUT (C),E OUT (C),H OUT (C),L OUT (n),A OUTD OUTI POP AF	ED 51 ED 59 ED 61 ED 69 D3 n ED AB	2/12 16 2/12 16 2/12 16 2/12 16 2/11 12 2/16 25 2/16 25 1/10	? ⇔B?-	RR H RR L RRA RRC (HL) RRC (IX+d) RRC (IY+d) RRC A RRC B	CB 1C CB 1D 1F CB 0E DD CB d 0E FD CB d 0E CB 0F CB 08	2/8 2/8 1/4 2/15 4/23 4/23 2/8 2/8	- z p r0 - z p r0 r0 - z p r0 - z p r0	SLL (IY+d) SLL A SLL B SLL C SLL D SLL E SLL H SLL I		4/23 - z p r7 2/8 - z p r7
AND IYL AND n BIT 0,(HL) BIT 0,(IX+d) BIT 0,(IY+d) BIT 0,A BIT 0,B	FD A5 E6 n CB 46 CB DD46 d CB FD46 d CB 47 CB 40 CB 41	2/8 2/7 2/12 4/20 4/20 2/8 2/8	-zvc -zpc ? <>b?- ? <>b?- ? <>b?- ? <>b?- ? <>b?-	HALT IM 0 IM 1 IM 2 IN A,(C) IN A,(n) IN B,(C)	76 ED 46 ED 56 ED 5E ED 78 DB n ED 40	1 / min 4 2 / 8 2 / 8 2 / 8 2 / 12 16 2 / 11 12 2 / 12 16	BUG  - z p - - z p -	LD C,IXL LD C,IYL LD C,n LD D,(HL) LD D,(IX+d) LD D,(IY+d) LD D,A	DD 4D FD 4D 0E n 56 DD 56 d FD 56 d 57	2/8 2/8 2/78 1/7 3/19 3/19 1/4		POP BC POP DE POP HL POP IX POP IY PUSH AF PUSH BC PUSH DE	D1 E1 DD E1 FD E1 F5 C5	1/10 1/10 1/10 1/10 2/14 2/14 1/11 1/11		RRC C RRC D RRC E RRC H RRC L RRCA RRD	CB 09 CB 0A CB 0B CB 0C CB 0D 0F ED 67 C7	2/8 2/8 2/8 2/8 2/8 2/8 1/4 2/18	- z p r0 - z p r0 - z p r0 - z p r0 - z p r0 r0 - z p -	SRA (HL) SRA (IX+d) SRA (IY+d) SRA A SRA B SRA C SRA D SRA F	CB 2E DD CB d 2E FD CB d 2E CB 2F CB 28 CB 29 CB 2A	2/15 - z p r0 4/23 - z p r0 4/23 - z p r0 2/8 - z p r0
BIT 0,C BIT 0,D BIT 0,E BIT 0,H BIT 0,L BIT 1,(HL) BIT 1,(IX+d) BIT 1,(IY+d)	CB 42 CB 43 CB 44 CB 45 CB 4E CB DD4E d CB FD4E d	4/20	? <> b?- ? <> b?- ? <> b?- ? <> b?- ? <> b?- ? <> b?- ? <> b?-	IN C.(C) IN D.(C) IN E.(C) IN H.(C) IN L.(C) INC (HL) INC (IX+d) INC (IY+d)	ED 48 ED 50 ED 58 ED 60 ED 68 34 DD 34 d FD 34 d	2/12 16 2/12 16 2/12 16 2/12 16 2/12 16 2/12 16 1/11 12 3/23 24 3/23 24	- Z p - - Z V - - Z V - - Z V -	LD D,B LD D,C LD D,D LD D,E LD D,H LD D,IXH LD D,IYH LD D,L	51 52 53 54 DD 54 FD 54 55	1/4 1/4 1/4 1/4 2/8 2/8 1/4		PUSH HL PUSH IX PUSH IY RES 0,(HL) RES 0,(IX+d) RES 0,(IY+d) RES 0,A	E5 DD E5 FD E5 CB 86 DD CB d 86 FD CB d 86 CB 87	1/11 2/15 2/15 2/15 2/15 4/23 4/23 2/8		RST 8 (1) RST 16 (2) RST 24 (3) RST 32 (4) RST 40 (5) RST 48 (6) RST 56 (7)	CF D7 DF E7 EF F7	1/11 16 1/11 16 1/11 16 1/11 16 1/11 16 1/11 16 1/11 16		SRA H SRA L SRL (HL) SRL (IX+d) SRL (IY+d) SRL A SRL B	DD CB d 3E FD CB d 3E CB 3F CB 38	2/8 - z p r0 2/8 - z p r0 2/15 - z p r0 4/23 - z p r0 4/23 - z p r0 4/23 - z p r0 2/8 - z p r0 2/8 - z p r0
BIT 1,A BIT 1,B BIT 1,C BIT 1,D BIT 1,E BIT 1,H BIT 1,L BIT 2,(HL)	CB 1F CB 48 CB 49 CB 4A CB 4B CB 4C CB 4D CB 56	2/8 2/8 2/8 2/8 2/8 2/8 2/8 2/8 2/12	? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?-	INC A INC B INC BC INC C INC C INC D INC DE INC DE INC E INC H	3C 4 3 0C 14 13 1C 24	1/4 1/4 1/68 1/4 1/4 1/68 1/4 1/4	- Z V - - Z V - BUG - Z V - - Z V - BUG - Z V - - Z V -	LD D,IXL LD D,IYL LD D,n LD DE,(addr) LD DE,hilo LD E,(HL) LD E,(IX+d) LD E,(IY+d)	11 lo hi 5E DD 5E d FD 5E d	2/8 2/8 2/78 4/20 3/1012 1/7 3/19 3/19		RES 0,B RES 0,C RES 0,D RES 0,E RES 0,H RES 0,L RES 1,(HL) RES 1,(IX+d)	CB 80 CB 81 CB 82 CB 83 CB 81 CB 85 CB 8E DD CB d 8E	2/8 2/8 2/8 2/8 2/8 2/8 2/8 2/15 4/23		SBC A,(HL) SBC A,(IX+d) SBC A,(IY+d) SBC A,A SBC A,B SBC A,C SBC A,D SBC A,E	9E DD 9Ed FD 9Ed 9F 98 99 9A 9B	1/7 3/19 3/19 1/4 1/4 1/4 1/4	- z v b - z v b	SRL C SRL D SRL E SRL H SRL L STOP SUB (HL) SUB (IX+d)	CB 39 CB 3A CB 3B CB 3C CB 3D 10 00 96 DD 96 d	2/8 -zpr0 2/8 -zpr0 2/8 -zpr0 2/8 -zpr0 2/8 -zpr0 2/4 1/7 -zvb 3/19 -zvb
BIT 2,(IY+d) BIT 2,(LY+d) BIT 2,A BIT 2,B BIT 2,C BIT 2,D BIT 2,E BIT 2,H	CB FD56 d CB DD56 d CB 57 CB 50 CB 51 CB 52 CB 53 CB 54		? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?-	INC IXH INC IYH INC HL INC IX INC IY INC L INC IXL INC IYL	DD 24 FD 24 23 DD 23 FD 23 2C DD 2C FD 2C	2/8 2/8 1/68 2/10 2/10 1/4 2/8 2/8	- Z V - - Z V - BUG  - Z V - - Z V - - Z V -	LD E,A LD E,B LD E,C LD E,D LD E,E LD E,H LD E,IXH LD E,IYH	5F 58 59 5A 5B 5C DD 5C FD 5C	1/4 1/4 1/4 1/4 1/4 1/4 2/8 2/8		RES 1,(IY+d) RES 1,A RES 1,B RES 1,C RES 1,D RES 1,E RES 1,H RES 1,L	CB 8F CB 88 CB 89 CB 8A CB 8B CB 8B CB 8C CB 8D	4/23 2/8 2/8 2/8 2/8 2/8 2/8 2/8 2/8		SBC A,H SBC A,IXH SBC A,IYH SBC A,L SBC A,IXL SBC A,IYL SBC A,n SBC HL,BC	9C DD 9C FD 9C 9D DD 9D FD 9D DE n ED 42	1/4 2/8 2/8 1/4 2/8 2/8 2/7 2/15	- z v b - z v b	SUB (IY+d) SUB A SUB B SUB C SUB D SUB E SUB H SUB IXH	FD 96 d 97 90 91 92 93 94 DD AC	3/19 - z v b 1/4 - z v b 2/8 - z v b
BIT 2,L BIT 3,(HL) BIT 3,(IX+d) BIT 3,(IY+d) BIT 3,A BIT 3,B BIT 3,C BIT 3,D	CB 55 CB 5E CB DD5E d CB FD5E d CB 5F CB 58 CB 59 CB 5A		? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?-	INC SP IND INDR INI INIR JP (HL) JP (IX) JP (IY)	33 ED AA ED BA ED A2 ED B2 E9 DD E9 FD E9	1/6 2/16 25 2/z16nz21 2/16 25 2/z16nz21 1/4 2/8 2/8	? ⇔B?- ? -? - ? ⇔B?- ? -? -	LD E,L LD E,IXL LD E,IYL LD E,n LD H,(HL) LD H,(IX+d) LD H,(IY+d) LD H,A	5D DD 5D FD 5D 1E n 66 DD 66 d FD 66 d	1/4 2/8 2/8 2/78 1/7 3/19 3/19 1/4		RES 2,(HL) RES 2,(IX+d) RES 2,(IY+d) RES 2,A RES 2,B RES 2,C RES 2,D RES 2,E		2/15 4/23 4/23 2/8 2/8 2/8 2/8 2/8 2/8		SBC HL,DE SBC HL,HL SBC HL,SP SCF SET 0,(HL) SET 0,(IX+d) SET 0,(IY+d) SET 0,A	ED 52 ED 62 ED 72 37 CB C6 DD CB d C6 FD CB d C6 CB C7	2/15 2/15 2/15 1/4 2/15 4/23 4/23 2/8	- z v b - z v b - z v b 	SUB IYH SUB L SUB IXL SUB IYL SUB n SWAP A SWAP B SWAP C	FD AC 95 DD AD FD AD D6 n CB 37 CB 30 CB 31	2/8 - z v b 1/4 - z v b 2/8 - z v b 2/8 - z v b 2/7 - z v b 2/8 - z v z 2/8 - z v z 2/8 - z v z
BIT 3,E BIT 3,H BIT 3,L BIT 4,(HL) BIT 4,(IY+d) BIT 4,(LY+d) BIT 4,A BIT 4,B	CB 5B CB 5C CB 5D CB 66 CB FD66 d CB DD66 d CB 67 CB 60	2/8 2/8 2/8 2/12 4/20	? <> b ? -	JP addr JP c,addr JP m,addr	C3 dr ad DA dr ad FA dr ad D2 dr ad C2 dr ad F2 dr ad E2 dr ad EA dr ad	3/10 12 3/10 12 3/10 12 3/10 12 3/10 12 3/10 12 3/10 12 3/10 12		LD H,B LD H,C LD H,D LD H,E LD H,H LD H,L LD H,n	60 61 62 63 64 65 26 n DD 67	1/4 1/4 1/4 1/4 1/4 1/4 2/78 2/8		RES 2,H RES 2,L RES 3,(HL) RES 3,(IX+d) RES 3,(IY+d) RES 3,A RES 3,B RES 3,C		2/8 2/8 2/15 4/23 4/23 2/8 2/8 2/8		SET 0,B SET 0,C SET 0,D SET 0,E SET 0,H SET 0,L SET 1,(HL)	CB C0 CB C1 CB C2 CB C3 CB C4 CB C5 CB C5 CB CE DD CB d CE	2/8 2/8 2/8 2/8 2/8 2/8 2/15 4/23		SWAP D SWAP E SWAP H SWAP L SWAP (HL) XOR (HL) XOR (IX+d) XOR (IY+d)	AE DD AC d	2/8 -zvz 2/8 -zvz 2/8 -zvz 2/8 -zvz 2/16 -zvz 1/7 -zp- 3/19 -zp-
BIT 4,C BIT 4,D BIT 4,E BIT 4,H BIT 4,L BIT 5,(HL) BIT 5,(IX+d)	CB 61 CB 62 CB 63 CB 64 CB 65 CB 6E CB DD6E d	2/8 2/8 2/8 2/8 2/8 2/8 2/12	? <> b?- ? <> b?- ? <> b?- ? <> b?- ? <> b?- ? <> b?- ? <> b?-	JP z,addr JR c,d JR d	CA dr ad 38 d 18 d 30 d 20 d 28 d 32 dr ad / EA dr ad	3 / 10 12 2 / 1127 8/12 2 / 12 2 / 127 8/12 2 / 1127 8/12 2 / 1127 8/12 2 / 11277 8/12 3 / 13		LD IXH,B LD IXH,C LD IXH,D LD IXH,E LD IXH,IXH LD IXH,IXL LD IXH,IXL	DD 60 DD 61 DD 62 DD 63 DD 64 DD 65 DD 26 n	2/8 2/8 2/8 2/8 2/8 2/8 2/8 3/11		RES 3,D RES 3,E RES 3,H RES 3,L RES 4,(HL) RES 4,(IX+d)	CB 9A CB 9B CB 9C CB 9D CB A6 DD CB d A6	2/8 2/8 2/8 2/8 2/15 4/23 4/23		SET 1,(IY+d) SET 1,A SET 1,B SET 1,C SET 1,D SET 1,E SET 1,H	FD CB d CE CB CF CB C8 CB C9 CB CA CB CB CB CC	4/23 2/8 2/8 2/8 2/8 2/8 2/8 2/8		XOR A XOR B XOR C XOR D XOR E XOR H	AF A8 A9 AA AB AC DD AC	1/4 -zp- 2/8 -zp-
BIT 5,(IY+d) BIT 5,A BIT 5,B BIT 5,C BIT 5,D BIT 5,E BIT 5,H	CB FD6E d CB 6F CB 68 CB 69 CB 6A CB 6B CB 6C	4/20 2/8 2/8 2/8 2/8 2/8 2/8 2/8	? <> b ? -		ED 43 dr ad ED 53 dr ad 22 dr ad ED 63 dr ad DD 22 dr ad FD 22 dr ad ED 73 dr ad	4/2024 4/2024 3/1624 4/2024 4/2024 4/2024 4/2004		LD IYH,A LD IYH,B LD IYH,C LD IYH,D LD IYH,E LD IYH,IYH LD IYH,IYH	FD 67 FD 60 FD 61 FD 62 FD 63 FD 64 FD 65	2/8 2/8 2/8 2/8 2/8 2/8 2/8		RES 4,A RES 4,B RES 4,C RES 4,D RES 4,E RES 4,H RES 4,L	CB A7 CB A0 CB A1 CB A2 CB A3 CB A4 CB A5	2/8 2/8 2/8 2/8 2/8 2/8 2/8		SET 1,L SET 2,(HL) SET 2,(IX+d) SET 2,(IY+d) SET 2,A SET 2,B SET 2,C	CB CD CB D6 DD CB d D6 FD CB d D6 CB D7 CB D0 CB D1	2/8 2/15 4/23 4/23 2/8 2/8 2/8		XOR IYH XOR L XOR IXL XOR IYL XOR n  BUG: If you are	FD AD AD DD AC FD AD EE n using sprites the	2/8 -zp- 1/4 -zp- 2/8 -zp- 2/8 -zp- 2/7 -zp- en you should not
BIT 5,L BIT 6,(HL) BIT 6,(IX+d) BIT 6,(IY+d) BIT 6,A BIT 6,B BIT 6,C	CB 6D CB 76 CB DD76 d CB FD76 d CB 77 CB 70 CB 71	4/20 2/8 2/8 2/8	? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?-	LD (HL),A LD (HL),B LD (HL),C LD (HL),D	/ 08 dr ad 2 12 77 70 71 72	1/7 1/7 1/7 1/7 1/7 1/7		LD IYH,n LD HL,(addr) LD HL,(addr) LD HL,hilo LD HL,SP+n LD I,A LD IX,(addr)	ED 6B dr ad 21 lo hi F8 n ED 47 DD 2A dr ad	3 / 10 12 2 / 12 2 / 9 4 / 20		RES 5,(HL) RES 5,(IX+d) RES 5,(IY+d) RES 5,A RES 5,B RES 5,C RES 5,D	CB AF CB A8 CB A9 CB AA	2/15 4/23 4/23 2/8 2/8 2/8 2/8		SET 2,D SET 2,E SET 2,H SET 2,L SET 3,(IX+d) SET 3,(IX+d) SET 3,(IY+d)	CB D2 CB D3 CB D4 CB D5 CB DE DD CB d DE FD CB d DE	2/8 2/8 2/8 2/8 2/15 4/23 4/23		their register co if you don't follo of sprite "blink" in BUG:on the GB disabled will not instruction imme instruction is "sk instruction If you don't follo	tents are in the v this rule, sprite vill randomly affe ZBO, HALT when lock the CPU, he diately following ipped", so put a	range \$fe00-\$feff .  a trashing the form ect your sprites in interrupts are lowever the the HALT NOP after the halt a trashing the form
BIT 6,D BIT 6,E BIT 6,H BIT 6,L BIT 7,(HL) BIT 7,(IX+d) BIT 7,(IY+d) BIT 7,A	CB 72 CB 73 CB 74 CB 75 CB 7E CB DD7E d CB FD7E d	4/20 2/8	? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?-	LD (HL),n LD (\$FF00+C),A LD (\$FF00+n), A LD (IX+d),A LD (IX+d),B	73 74 75 36 n E2 E0 n DD 77 d DD 70 d	1/7 1/7 1/7 2/10 2/8 2/12 3/19 3/19		LD IX,hilo LD IY,(addr) LD IY,hilo LD L,(HL) LD L,(IX+d) LD L,(IY+d) LD L,A LD L,B	DD 21 lo hi FD 2A dr ad FD 21 lo hi 6E DD 6E d FD 6E d 6F 68	4/14 4/20 4/14 1/7 3/19 3/19 1/4		RES 5,E RES 5,H RES 5,L RES 6,(HL) RES 6,(IX+d) RES 6,A RES 6,A	FD CB d B6 CB B7 CB B0	2/8 2/8 2/8 2/15 4/23 4/23 2/8 2/8			CB DF CB D8 CB D9 CB DA CB DB CB DC CB DD cructions with t	2/8 2/8 2/8 2/8 2/8 2/8 2/8 2/8	   neaning:	BUG:on the GB disabled will not instruction imme	280, HALT when lock the CPU, he diately following	interrupts are lowever the
BIT 7,B BIT 7,C BIT 7,D BIT 7,E BIT 7,H BIT 7,L	CB 78 CB 79 CB 7A CB 7B CB 7C CB 7D	2/8 2/8 2/8 2/8 2/8 2/8 2/8	? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?- ? ⇔b?-	LD (IX+d),D LD (IX+d),E LD (IX+d),H	DD 71 d DD 72 d DD 73 d DD 71 d DD 75 d DD 36d n	3/19 3/19 3/19 3/19 3/19 4/19		LD L,C LD L,D LD L,E LD L,H LD L,L LD L,n	69 6A 6B 6C 6D 2E n	1/4 1/4 1/4 1/4 1/4 2/7		RES 6,C RES 6,D RES 6,E RES 6,H RES 6,L	CB B1 CB B2 CB B3 CB B4 CB B5	2/8 2/8 2/8 2/8 2/8		LD (SFF00+n), A LD A, (SFF00+n) LDI (HL),A LDI A, (HL) LDD (HL),A LDD A, (HL) LDD A, (HL) LD A, (C) LD (C),A	LDH (n),A LDH A,(n) LD (HLI),A or LD (HL+), LD A,(HLI) or LD A,(HL+) LD (HLD),A or LD (HL-), LD A,(HL-) or LD A,(HLI LD A,(SFF00+C) A	r) A		Black: GBZ80 Blue: Z80 only Red: GBZ80 o Purple: Cpc Ti	nly	