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MICROPROCESSOR ASSIGNMENT 3

1. A set of N data bytes is stored in m/m locations starting from 2501H. The value of N is stored in 2500H. Write a program to store these data bytes from m/m location 2600H if D0 or D7 is 1. Otherwise reject the data byte.

MNEMONICS CODE:
LXI D, 2600H
LXI H, 2500H
MOV B, M
INX H
MOV A, M ---→ (LOOP)
ANI 81H
JZ REJECT
MOV A, M
STAX D
INX D
INX H ----→(REJECT)
DCR B
JNZ LOOP
RST 5

HEX CODES:
3000: 11 00 26
3003: 21 00 25

3006: 46
3007: 23
3008: 7E
3009: E6   81
300B: CA   11   30
300E: 7E
300F: 12
3010: 13
3011: 23
3012: 05
3013: C2   08   30
3016: EF

2. There are N data bytes stored from m/m location 2200H. The value of N is stored in 21FFH. Write an 8085 program to find the sum of integers whose LSB and MSB are 1. Store the result in 2500H and 2501H.

MNEMONICS CODE:
LXI H, 21FFH
MOV B, M
MVI C, 00H
INX H
MVI D, 00H
MOV A, M ---→ (LOOP)
ANI 81H
SUI 81H
JNZ NOT_ELIGIBLE
MOV A, D
ADD M
JNC NO_CARRY
INR C
MOV D, A ---→ (NO_CARRY)
INX H -----→ (NOT_ELIGIBLE)

DCR B

JNZ LOOP

LXI H, 2500H

MOV M, C

INX H

MOV M, D

RST 5

HEX CODES:

4000:	21	FF	21
4003:	46		
4004:	0E	00	
4006:	23		
4007:	16	00	
4009:	7E		
400A:	E6	81	
400C:	D6	81	
400E:	C2	18	40
4011:	7A		
4012:	86		
4013:	D2	17	40
4016:	0C		
4017:	57		
4018:	23		
4019:	05		
401A:	C2	09	40
401D:	21	00	25
4020:	71		
4021:	23		
4022:	72		
4023:	EF		

3. Write an 8085 program to find the Nth Fibonacci number using function and store it in 2050H. The value of N is stored in m/m location 2060H.

FIB FUNCTION CODE

LXI H, **2060H**

MOV B, M

DCR B

DCR B

MVI D, **01H**

MVI E, **01H**

MVI A, **00H** -→(LOOP)

ADD D

ADD E

MOV D, E

MOV E, A

DCR B

JNZ **LOOP**

STA **2050H**

RET

MAIN PROGRAM

CALL **FIBONACCI_FUNCTION**

RST **5**

FIB FUNCTION HEX CODES:

5000: 21   60   20

5003: 46

5004: 05

5005: 05

5006: 16   01

5008: 1E   01

500A: 3E   00

500C: 82

500D: 83

500E: 53

500F: 5F
5010: 05
5011: C2   0A   50
5014: 32   50   20
5017: C9

MAIN PROGRAM HEX CODES:
5500: CD   00   50
5503: EF

4. Write a program to transfer a block of bytes of size N from location1 to location2 (loc2 > loc1) when the size of overlap between the two locations is defined by M. The values of N and M are stored in 201EH and 201FH, respectively.

MNEMONICS CODE:

LDA **201FH**

MOV **C, A**

LDA **201EH**

MOV **B, A**

SUB **C**

LXI **H, 3200H**

MOV **D, H**

MOV **E, L**

ADD **E**

MOV **E, A**

DCR **B**

MOV **A, B**

ADD E

MOV E, A

MOV A, B

ADD L

MOV L, A

INR B

MOV A, M --→ (LOOP)

STAX D

DCR L

DCR E

DCR B

JNZ LOOP

RST 5

HEX CODES:

6000: 3A   1F   20

6003: 4F

6004: 3A   1E   20

6007: 47

6008: 91

6009: 21   00   32

600C: 54

600D: 5D

600E: 83

600F: 5F

6010: 05

6011: 78

6012: 83

6013: 5F

6014: 78

6015: 85

6016: 6F

6017: 04

6018: 7E -->LOOP

6019: 12

601A: 2D

601B: 1D

601C: 05

601D: C2   18   60

6020: EF