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**Class: 2nd Year, 2nd Semester**

**Section: A3**

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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

1. 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

1. 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

1. 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