

AEIE 3115

DATE  
11/07/19 PAGE NO.

Day 1

EXPT. NO.  
1

Problem:- Load 23H to D Register and 5643H in BC Reg. Pair. Copy the Content of D Reg. to A Register.

Solution:-

Address	Mnemonics	Hex code	Comments
8000H	MVI D, 23H	16H 23H	Load Reg D with 23H
8002H	LXI B, 5643H	01H 43H 56H	Load Reg Pair B-C with 5643H
8005H	MOV A, D	7AH	Copy Content of Reg D to Reg A.
8006H	RST 1	CFH	To stop execution

Input:- Reg B: 56 H

Reg C: 43 H

Reg D: 23 H

Output:-

Reg A  $\leftarrow$  23 H

Reg B  $\leftarrow$  56 H

Reg C  $\leftarrow$  43 H

Reg D  $\leftarrow$  23 H

Problem 2) Load 44H to A Register and 08H in B Reg. ADD the Content of B Reg & A Register.

Solution: 2)

Address	Mnemonics	Hex Code	Comments
9000H	MVI A, 44H	3EH 44H	Load Reg. A with 44H.
9002H	MVI B, 08H	06H 08H	Load Reg B with 08H
9004H	ADD B	00H	Add contents of Reg B & Reg A.
9005H	RST 1	CFH	To stop execution.

Input:- Reg A : 44 H

Reg B : 08 H

Output:-

Reg A  $\leftarrow$  4CH

Reg B  $\leftarrow$  08H

Day 2

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## Assignment - 2

EXPT. NO.

Problem 1: → Two 8 bit numbers are stored in memory location C100H & C101H. Add the two numbers and store the result in C102H & C103H

I/P:- C100H → FBH  
C101H → 25H.

Solution:

Source code	Loc	OBJ. Comments
LXI H, C100	9000	21,00C1 ?
MOV A, M	9003	7E
MVI C, 00	9004	0E00
INX H	9006	23
ADD M	9007	86
JNC 900C	9008	D2,0C9D
INR C	900B	0C
B 900C: INX H	900C	23
MOV M, A	900D	77
INX H	900E	23
MOV M, C	900F	71
RST 1	9010	Cf

Output : 20  $\rightarrow$  C102H  
01  $\rightarrow$  C103H

Problem 2.) Subtract the Content of Register B, from accumulator content. Check the result & store borrow (if any) into C register.

B Reg.  $\rightarrow$  FA H  
Acc.  $\rightarrow$  F9H.

Source code

loc

obj

MVL	C, 00	9200	0E0D
MVL	A, 79	9202	3E79
MVI	B, FA	9204	06FA
SUB	B	9206	90
JNC	920B	9207	D20B92
INR	C	920A	0C
		920B	CF

Output:-

A = 7F  
C = 01

# Assignment - 3

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Problem 1.) Two 16 bit number are stored in memory location from C200H to C203H.  
Add the numbers and store result in next memory location.

C200H : 23H } 1st 16bit no.  
C201H : EBH }

C202H : 39H } 2nd " "  
C203H : 72H }

Address	Mnemonics	Hexcode	Comments
9004	MOV C,00	0E 00	Load Reg C with 00H
9006	LHLD C200	2A 00 C2	Load H-L registers directly
9009	XCHG1	EB	Exchange H-L with D.F
900A	LHLD C202	2A 02 C2	Load H-L reg. directly
900D	DAD D	19	Add register pair? To H-L pair
900E	JNC 9012	D2 12 9D	Jump if No Carry
9011	INR C	0C	Increment C with 1.
9012	<del>9012: SHLD C204</del>		Store H-L reg. Direct
9015	MOV A,C	F9	copy content of Reg C to Reg A (Accu).
9016	STA C206	32 06 C2	Store accumulator direct
9019	RST 1	CF	To stop execution.

## O/P

C204H: 9C "lower byte"

C205H: 57 "higher byte"

C206H: 01 "Carry bit."

- 2) four 8-bit numbers are stored in memory locations from C300H to C303H. Perform BCD addition on these numbers. Store result in next memory loc.

i/P: C300H: 23H, C301H: 44H, C302H: 79H  
C303H: 92H.

Address	Mnemonics	Hex code	Comments
C39000	LXI H,C308	21 00 C3	Load reg. pair immediate
9003	MVI B,03	06 03	Load Reg. B with 03
9005	MVI C,00	0E 00	Load Reg. C with 00
9007	MOV A,M.	7E	Copy the Content of M to Accumulator.
9008	9008: INX H	23	Increment reg. pair by 1.
9009	ADD M	86	Add the Content of M & A
900A	DAA	27	Content of Accumulator converted to BCD
900B	JNC 900F	D2 OF 9D	Jump if no carry
900E	INR C	0C	Increment C by 1
900F	900F: DCR B	05	Decrement B by 1
9010	JNZ 9008-	C2 08 9D	Jump if no zero to loc. 9008
9013	STA C304	32 04 C3	Store accumulator directly
9016	MOV A,C	79	Copy the Content of C for A
9017	STA C305	32 05 C3	Store accumulator directly.
901A	RST 1	CF	To stop execution.

## Output

C304: 18H

C305: 02H.

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Problem 3) Shift a block of 10 data starting from memory location C050H onward, to another memory location starting from C000H in reverse order.

Address	Mnemonics	Hex code	Comments
8000	MVI B,0AH	0A	Load Reg. B with 0A
8002	LXI H,C050H	21 50 C0	HL Reg. pair point mem. location C050 & loaded with its Content
8005	LXI D,0009	11 09 C0	DE Reg. pair point mem. location C009.
8008	MOV A,M	7E	Content of memory loc. pointed by HL Reg. pair is moved to acc.
8009	STAX D	12	Content of D is added to the content of acc. & store in acc.
800A	MVI M,00	36 00	00 stored in mem. location pointed by HL2.
800C	INX H	23	HL Reg. pair point to next mem. location
800D	DCX D	1B	Mem. location pointed by DE Reg. is decremented

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Input

C050:00  
C051: 01  
C052: 02  
C053: 03  
C054: 04  
C055: 05  
C056: 06  
C057: 07  
C058: 08  
C059: 09

Output

C000: 09  
C001: 08  
C002: 07  
C003: 06  
C004: 05  
C005: 04  
C006: 03  
C007: 02  
C008: 01  
C009: 00

C050 = 00  
C051 = 00  
C052 = 00  
C053 = 00  
C054 = 00  
C055 = 00  
C056 = 00  
C057 = 00  
C058 = 00  
C059 = 00

## Assignment - 2

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6.) Write a program for packing and unpacking  
of BCD numbers.  
 $\Rightarrow$   
 $XY = 56H$ .

Address	Mnemonic	Hexcode	Comments
4000	MOV B,5H	06 5C	Load B with 5
4002	MOV A,B	78	Move the content of B to A
4003	ANI 0FH	E6 0F	AND operation of A with 0FH
4005	MOV C,A	4F	Move the content of A to C
4006	MOV A,B	78	Move the content of B to A
4007	ANI F0H	E6 F0	AND operation of A with F0H
4009	RRC	0F	Right Rotation Carry
400A	RRC	0F	"
400B	RRC	0F	"
400C	RRC	0F	"
400D	MVN B,A	4F	Move the content of A to B
400E	MVNA,B	78	Move the content of B to A
4010	RRC	0F	"
4011	RRC	0F	"
4012	RRC	0F	"
4013	ORA C	EA	OR operation of A with C
4014	ROT L	C4	OR operation of A with C
4015	ROT R	C4	OR operation of A with C
4016	TO STOP Execution.		

FUNC

$[A] \leftarrow [A] - [[H-L]]$ . States: 7. Flags: a  
e content of the memory location ad-  
ulator. The result is placed in the accu-  
mulator.

**3B1 r.** (Subtract register from accumu-  
lator)  $[A] \leftarrow [A] - [r] - [CS]$ . States: 7. Flag:  
The content of the memory location addr-  
ess of the accumulator. The result is p-  
laced in the accumulator. For exam-  
**SUB data.** (Subtract immediate data from  
[A])  $[A] \leftarrow [A] - \text{data}$ . States: 7. Flags: all. Add-  
ress is placed in the accumulator. For exam-  
ple, if the content of the instruction is data. It is  
written as D6 05.

**INR r.** (Increment register content)  
 $[r] \leftarrow [r] + 1$ . States: 4. Flags: all except carry f.  
The content of register r is incremented by one.  
**INR M.** (Increment memory content)  
 $[[H-L]] \leftarrow [[H-L]] + 1$ . States: 10. Flags: all except  
carry f. The content of the memory location addressed  
by r is incremented by one.

**DCR r.** (Decrement register content)  
 $[r] \leftarrow [r] - 1$ . States: 4. Flags: all except carry f.  
The content of register r is decremented by one.  
**DCR M.** (Decrement memory content)  
 $[[H-L]] \leftarrow [[H-L]] - 1$ . States: 10. Flags: all except  
carry f. The content of the memory location addressed  
by r is decremented by one.

**INX rp.** (Increment location addressed  
by rp)  $[rp] \leftarrow [rp] + 1$ . States: 6. Flags: none.  
The content of the register pair rp is incremented  
by one. **DX rp** (Decrement location addressed  
by rp)  $[rp] \leftarrow [rp] - 1$ . States: 6. Flags: none.  
The content of the register pair rp is decremented  
by one.

Input

B → 56H

Output

A → 56H

05H ?

06H

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→ Load 9EH into memory location C00H convert the number into ASCII CODE and store the result in next memory location.

Address	Mnemonics	Hexcode	Comments
9000	MVR B, 9EH	06 9E	Load Reg B with 9EH
9002	MOV A, B	78	Move the Content of B to A Reg
9003	ANI 0FH	E6 OF	AND operation of Acc. with 0FH
9005	MOV C, A	AF	Move the Content of Acc to C Reg.
9006	MOV A, B	78	Move the Content of B to Acc.
9007	ANI F0H	E6 F0	AND operation of Acc with F0H
9009	RRC	OF	Right Rotation through Carry
900A	RRC	OF	"
900B	RRC	OF	"
900C	RRC	OF	"
900D	MOV B, A	47	Move the Content of A to B
900E	MOV A, B	78	Move the Content of B to A
900F	RRC	OF	Right Rotation through Carry
9010	RRC	OF	"
9011	RRC	OF	"
9012	RRC	OF	"
9013	ORA C	B1	OR operation of A with C Reg.
9014	MOV A, B	78	Move the Content of B to A
9015	ADI 30H	C6 80	Add 30H with the Accumulator
9017	MOV B, A	47	Move the Content of A to B
9018	MOV A, C	79	Move the Content of C to A

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Input

B → 9EH

Output

A → 45H  
B → 39H  
C → 45H

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901A	ADD 37H	CC 37
901B	MOV C,A	4F
901C	RET L	CF

Comments : Add 39H with Accumulator  
Move the Content of A  
→ C  
To Stop Execution.

~~08/08/14~~

days

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## Assignment-2

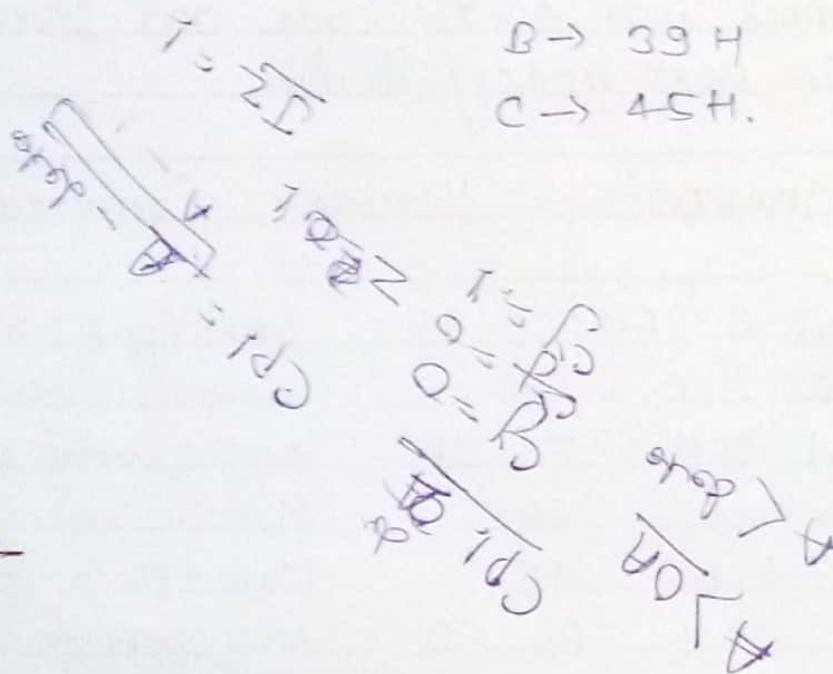
7) Load 9EH into memory location C100H convert the number into ASCII code and store the result in next memory location.



Address	Mnemonics	Hexcode	Comments
9000	MVT B, 9EH	06 9E	Load Reg-B with 9E
9002	MOV A, B	78	Move the Content of B to A
9003	ANI OFH	E6 OF	AND operation of A with OF
9005	MOV C, A	4F	Move the Content of A to C
9006	MOV A, B	78	Move the Content of B to A
9007	ANI FOH	E6 FO	AND operation of A with FO
9009	RRC	OF	Rotate accumulator right
900A	RRC	OF	"
900B	RRC	OF	"
900C	RRC	OF	"
900D	MOV B, A	47	Move the Content of A to B
900E	MOV A, B	78	Move the Content of B to A
900F	CPI OAH	FE OA	Compare OA with accumulator
9011	JC 9016	DA 1A 90	Jump into 9016 if Carry
9014	ADI 07H	C6 07	Add 07H to with accumulator
9016	ADI 30H	C6 30	Add 30H with accumulator
9018	STA C101H	47	Move the Content of A to B
9019	MOV A, C	79	Move the Content of C to A
901A	CPI OAH	FE OA	Compare OAH with accumulator

Input

B → 9EH



Output

A → 45H

B → 39H

C → 45H.

Input

Input

C200 → 11 H  
C201 → 22 H  
C202 → 77 H  
C203 → 88 H  
C204 → 99 H.

Output

Addition of positive numbers is

C206 → AA H

Total <sup>No. of</sup> Negative numbers is

C207 → 02 H

day 6

ADDITIONAL ASSIGNMENT

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4. Write a program to arrange 5 numbers stored into memory starting from C200H location in ascending order repeat the above for descending order.

Ascending order

Address	Mnemonic	Hex code	Comments
9000	LXI H,C200	21 00 C2	Load the Content of C200 Mem. location into H-L pair.
9003	MVI D,00	16 00	Move 00H into D Reg.
9005	MVI C,05	0E 05	Move 05H into C Reg.
9007	DCR C	0D	Decrement value of C by 1.
9008	MOV A,M	7E	Move the Content of Memory location pointed by H-L pair into A
9009	INX H	23	Increment H-L pair by 1
900A	CMP M	BE	Compare pointed memory location by H-L pair with accumulator.
900B	JC 9015	DA 15 90	Jump into 9015 loc. if carry.
900E	MOV B,M	46	Move the Content of memory location pointed by H-L pair into B Reg.
900F	MOV M,A	77	Move the Content of A Reg. into memory location pointed by H-L pair.

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Input

C200: 05H  
C201: 03H  
C202: 04H  
C203: 06H  
C204: 01H

Output

C200: 01H  
C201: 03H  
C202: 04H  
C203: 05H  
C204: 06H

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## Decreasing Order

Addres Memory Address Comment

9000 LDI H, C200 21 00 C2 H-L pair point mem loc.  
C200 & located with its word

9003 MVN D,00 16 00 Move D0H into D Reg.

9005 MVI C,05 DE 05 Move 05H into C Reg.

9007 ADD C D2 Decrement C Reg Content by 1

9008 MOV A,M FE Move the content of ~~memory~~  
Memory location pointed by  
H-L pair into Accumulator

9009 INX H 23 Increment mem location pointed  
by H-L pair by 1

900A CMP M BE Compare to the content of  
memory location pointed by  
H-L pair with accumulator

900B JNE9015 DA 15 90 Jump if carry into loc 9015

900E MOV B,M 46 Move the content of memory  
location pointed by H-L pair  
pair into B Register

## Input

C200: 01H  
 C201: 02H  
 C202: 04H  
 C203: 05H  
 C204: 06H

## Output

C200: 06H  
 C201: 05H  
 C202: 04H  
 C203: 03H  
 C204: 01H

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Address	Mnemonic	Hexcode	Comments
900F	MOV M,A	77	Move the content of accumulator into memory location pointed by HL Reg. pair
9010	DCX H	28	Decrement H-L Reg. pair by 1
9011	MOV M,0	70	Move the content of 0 Reg. into the memory location pointed by H-L Reg. pair.
9012	INX H	23	Increment H-L Reg pair by 1
9013	MVI D,01	16 01	Move 01H into D Reg.
9015	SCR C	0D	Decrement C Reg content by 1
9016	JNZ 9008	C2 08 90	Jump if not zero into 9008
9019	MOV A,D	7A	Move the content of D into A.
901A	CPI 01	FE 01	Compare 01H with accumulator
901C	JZ 9000	CA 00 90	Jump if zero to location 9000
901F	RST 1	CF	To stop execution.

7) A string of readings is stored in memory locations starting at C070H, and the end of the string is indicated by the byte 0DH. Write A program to check each byte in the string, and save the bytes in the range of 30H to 39H (both inclusive) in memory locations starting from C0D4H.  
 DATA: 35H, 2FH, 30H, 39H, 3AH, 3FH, 31H,  
 0DH, 32H.

Address	Memory	Hexcode	Comments
8000	LXI H,C070	21 70 C0	H-L pair point memory loc. C070 & loaded its content
8003	LXI D,C090	11 90 C0	D-E pair point memory loc. C090 & loaded with its content
8006	MOV A,M	3E	Copy the content of location pointed by HL pair into A.
8007	MIX H	23	Increment H-L pair by 1.
8008	CPL D	FE 0D	Compare, ODH with accumulator
800A	JZ 801C	CA 1C 80	Jump if zero info memory loc. 801C
800D	CPL S	FE 30	Compare 30H with accumulator

Input

C070: 35H  
C071: 2F H  
C072: 30H  
C073: 39H  
C074: 3AH  
C075: 37H  
C076: 31H  
C077: 0DH  
C078: 32H

Output

C090: 35  
C091: 30  
C092: 39  
C093: 37  
C094: 31

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Address Mnemonic

800F JC 8006 ✓  
8012 CPI 3A ✓  
8014 JNC 8006  
80 80  
8017 STAX D ✓

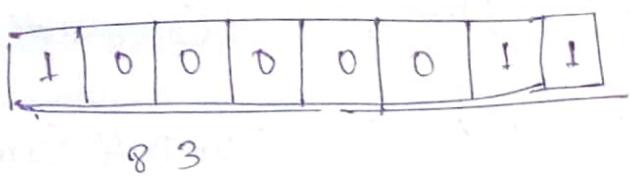
8018 INX D

8019 JMP 8006

801C RST 1 ✓

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Mode 1 -



LXI H, 02000  
LXI D, 3000  
MOV A, M

SUB

ST  
LXI H, 2000

MOV A, M

MOV AB, A

INX H

MOV A, M

SUB B

INX H

~~STAX~~ MOV M, A } STAX H

Address of 110

fig:- Interfacing LED o/p and Switch I/P with  
µP1 8085 via PPI 8255

A7 A6 A5 A4 A3 A2 A1 A0      Selected 110  
 D 0 → Port A  
 0 1 → 11 B  
 1 0 → 11 C  
 1 1 → CWR

D <sub>7</sub>	D <sub>6</sub>	D <sub>5</sub>	D <sub>4</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>1</sub>	D <sub>0</sub>
1		110	A10	PA	PCV	110	110

Model → D 0      0 → Model / PB  
 Model → 0 1      1 → 1 X  
 Model → 1 X  
 for PA

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Address   Mnemonics   Hexcode   Comments

9000 MVI A,90H 9E 9D Load 90H to the accumulator

9002 OUT F3 D3 F3 Load the Content of accumulators  
to port CWR

9006 OUT F1 D3 F1 Port B is taken as output

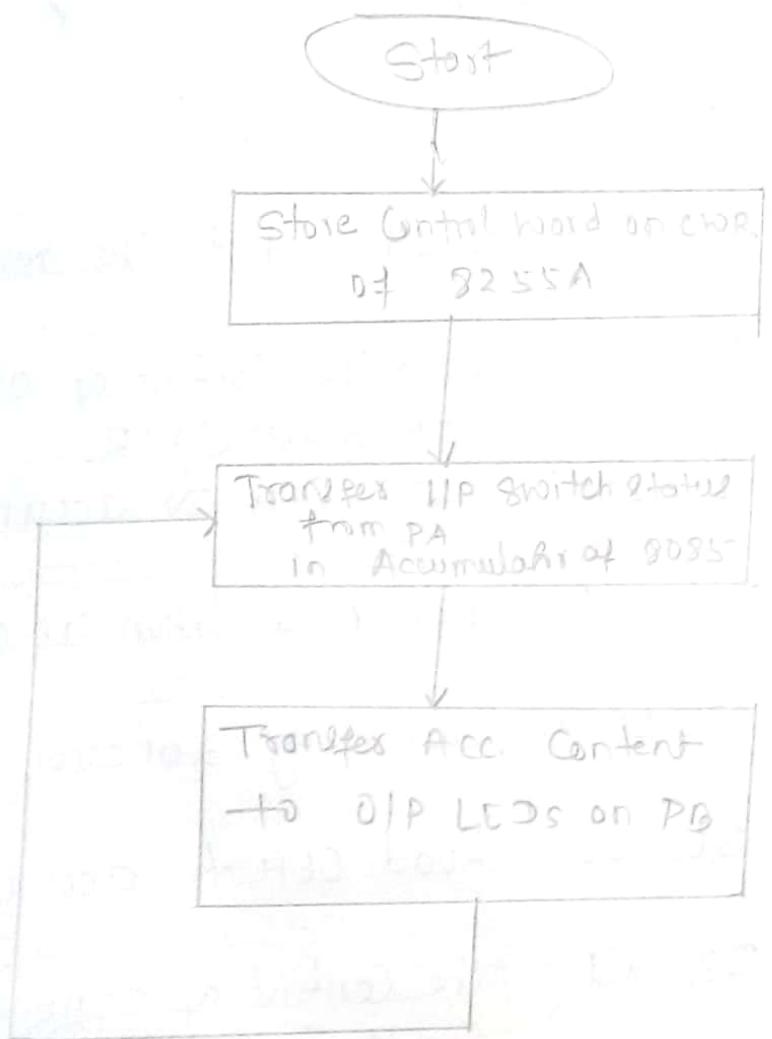
9008 CALL A000 C0 00 A0 Call delay function

900B MVN A,00H JE 00 Load 00H to accumulator  
900D OUT F1 D3 F1 The Content of accumulator  
901E ADD A,B  
901F SUB A,C  
9020 MUL A,D  
9021 DIV A,E

900F CALL A000 CD 00 AD Call delay function

9012 JMP 9004 C3 04 90 Jump to location 9004

Flow chart



for scrolling: the LEDs of Port B from L → R

Address	Mnemonic	Hex code	Comments
C000	MVI A, 90H	3E 90	Load 90H to accumulator
C002	OUT F3	3E <sup>D3</sup> 01 F3	Load the Content of Accumulator to CWR
C006	OUT F1	D3 F1	Load the content of <u>Accumulator</u> to Port A
C008	CALL A000 CD 00 AD	Call delay function	
C00B	RLC	07	Rotate accumulator left
C00C	OUT F1	D3 F1	Load the Content of Accumulator to Port A
C00E	CALL A000 CD 00 AD	Call delay function	
C012	JMP C006 C3 06 C0	Jump to location C006	

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Assignment - 5

Day 8

EXPT. NO.

Write a assembly program to display CSCA in Seven segment display using 8085 microprocessor and 8255A PPI

Address	Mnemonics	Hex code	Comments
8000	MVI A, 80H	9E 80	Move 80H to the A Reg.
8002	OUT F3	D3 F3	Load the Content of A Reg. to F3 port (CWR)
8004	MVI A, 59H	9E 59	Move 59H to the A Reg.
8006	OUT F0	D3 F0	Load the Content of A Reg. to F0 port (Port A)
8008	MVI A, 08H	9E 08	Move 08H to the A Reg.
800A	OUT F1	D3 F1	Load the Content of A Reg. to Port F1 (Port B)
800C	MVI A, 00H	9E 00	Move 00H to the A Reg.
800E	OUT F1	D3 F1	Load the Content of A Reg. to Port F1 (Port B)
8010	MVI A, 6D	9E 6D	MOVE 6D to the A Reg.
8012	OUT F0	D3 F0	Load the Content of A Reg. to Port F0 (Port A)

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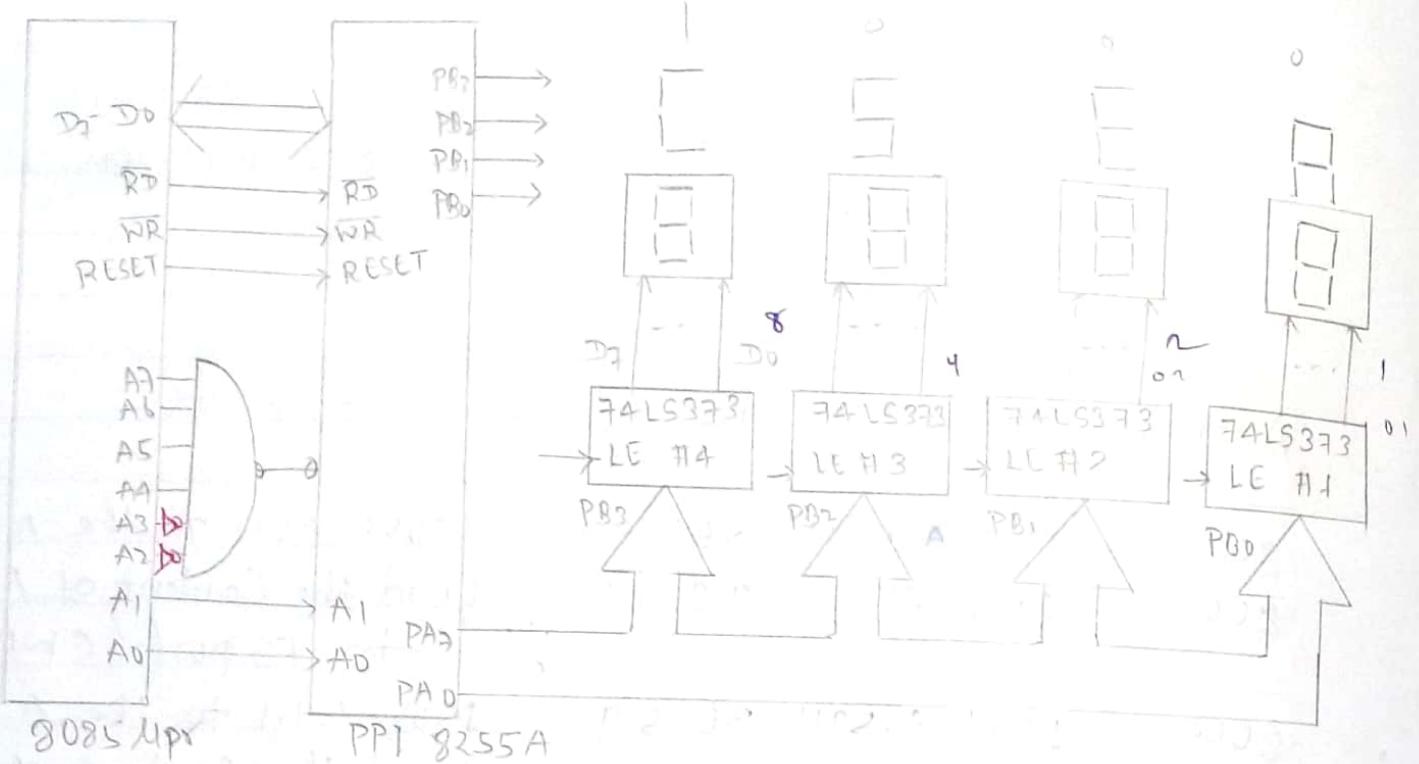
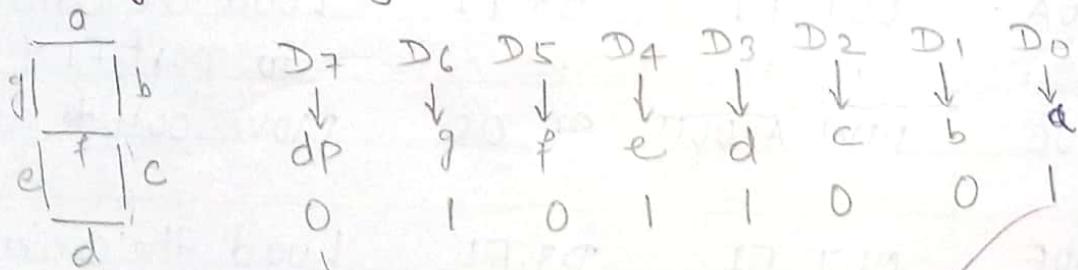


Fig: Interfacing Seven Segment Display with Mpu 8085 via 8255A (PPI)

→ Seven Segment Display



S → 6DH

C → 79H

A → 77H

CWR:

59 H(C) ✓

D <sub>7</sub>	D <sub>6</sub>	D <sub>5</sub>	D <sub>4</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>1</sub>	D <sub>0</sub>
1	0	0	0	0	0	0	0

Fill ports are set to 0/p mode.

1000 0000 0000

OUTPUT

EEFA

DATE	PAGE NO.	EXPT NO.
Address	Mnemonics	Hexcode
802C	MVI A,01	3E 01H
802E	OUT F1	D3 F1
8030	MVI A,00H	3E 00H
8032	OUT F1	D3 F1
8034	JMP 8004	C3 04 08

Comments:

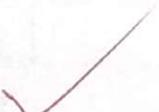
Move 01H to the A Reg.  
Load the Content of A Reg to port F1 (Port n)  
Move 00H to the A Reg.  
Load the Content of A Reg. to port F1 (Port n).  
Jump to the Memory location 8004

for Delay

Address	Mnemonics	Hexcode	Comments
A000	MVI B,FFH	06 FFH	Load FFH to Reg. B
A002	MVI C,FFH	0E FFH	Load FFH to Reg. C
A004	DCR C	0D	Decrement of Reg C by 1.
A005	JNZ A004	C2 04 AD	Jump to location A004 if not zero.
A008	DCR B	05	Decrement of Reg B by 1
A009	JNZ A00E	C2 02 AD	Jump to location A00E if not zero
A08C	RET	CFH C9 H	Return to call

Output of blinking

EEET



Day 9

Figure

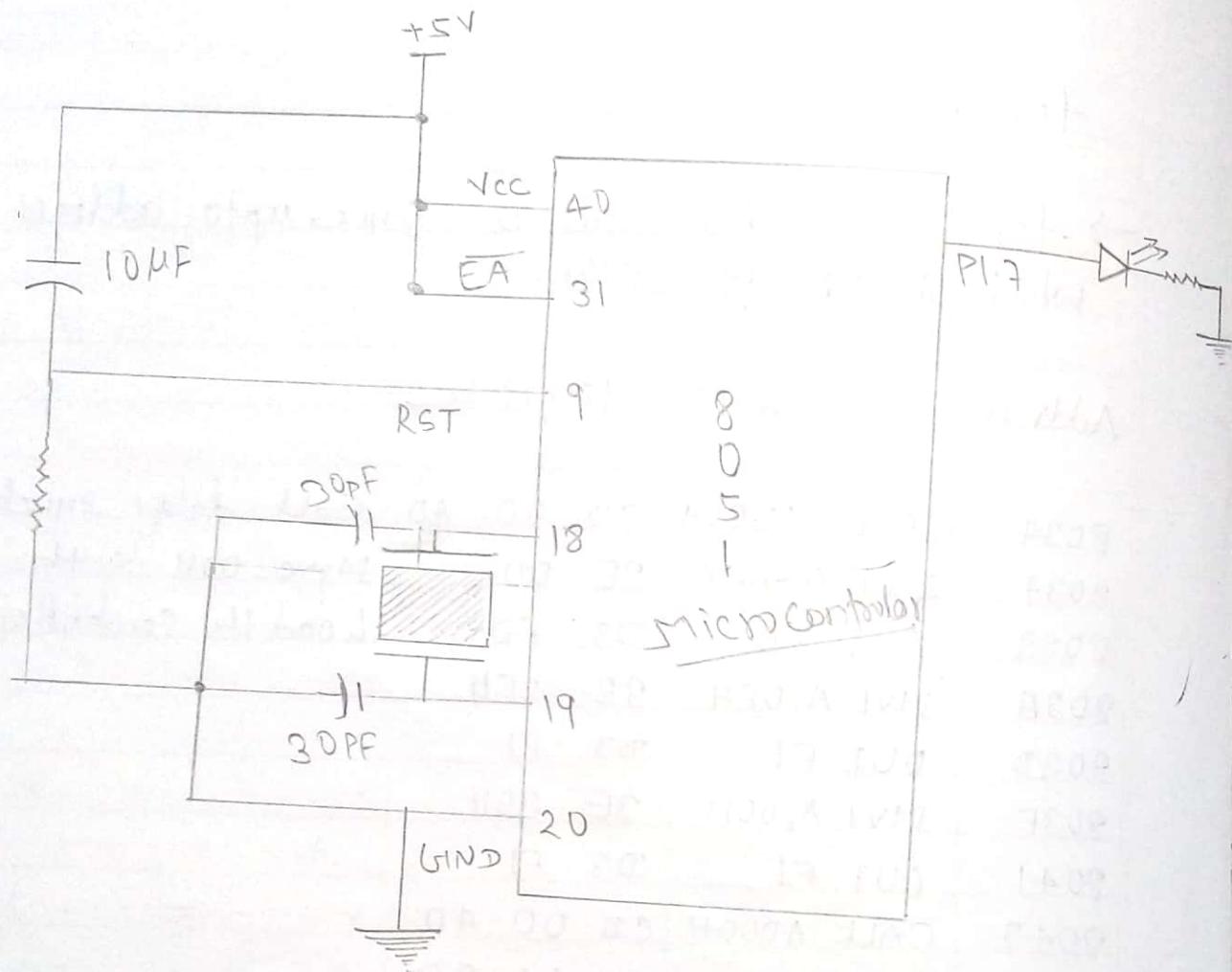
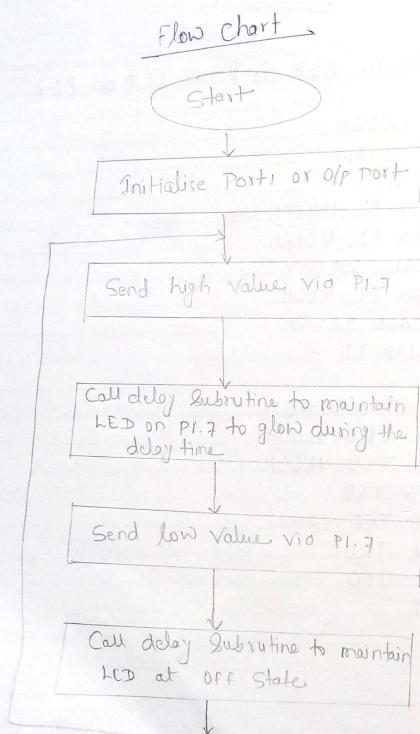


fig:- Power on Reset Circuit of 8051 Microcontroller  
with LED connected on P1.7



Assignment - 3  
Day 10

Familiarization of 8086A microprocessor kit / simulator and assembly language programming using 8086 A microprocessor / simulator for:

- c) Shifting a block of data from one memory location to another.

Address	Mnemonics	Comment
9000	MOV CL, 0A	Move CL with 0AH.
9002	MOV SI, 2000	Load SI Reg with location 2000
9005	MOV DI, 3000	DL " " " 3000
9008	MOVSB	Move the Content of SI into DI
9009	LOOP 9008	Repeat when CL is non-zero
900B	INT 3	Stop execution.

Output

I/P	O/P :
2000: 00	3000: 00
2001: 01	3001: 01
2002: 02	3002: 02
2003: 03	3003: 03
2004: 04	3004: 04
2005: 05	3005: 05
2006: 06	3006: 06
2007: 07	3007: 07
2008: 08	3008: 08
2009: 09	3009: 09

W/P

2000: 01	3000: 01
2001: 02	3001: 02
2002: 03	3002: 03
2003: 04	3003: 04
2004: 05	3004: 05
2005: 06	3005: 06
2006: 07	3006: 07
2007: 08	3007: 08
2008: 09	3008: 09
2009: 0A	3009: 0A

C/P

Output

Flag Registers : F002H ✓

DATE: PAGE NO: EXPT NO:

2.2 b) String matching

→ Address      Mnemonics      Comments.

8000	MOV CL, 0A	Load CL Register with 0A
8002	MOV SI, 2000	Load SI Reg. with location 2000
8005	MOV DI, 3000	Load DI Reg. with location 3000
8008	REPNZ CMPSB	Compare SI & DI and Repeat if they are equal
800A	INT 3	Stop execution.

*Ansari  
Date: 10/10/19*

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### Assignment - 3

EXPT NO.

→ q) Addition of two 32-bit hex numbers.

Address	Mnemonics	Comments
9000	MOV CL, 00	Move 00H to CL Reg
9002	MOV AX, [3000]	Move the Content of 3000H to AX
9005	MOV BX, [4000]	" " "[4000]" to BX
9009	ADD AX, BX	Add the Content of AX to BX
900B	MOV DX, AX	Move the Content AX to DX
900D	MOV AX, [3002]	Move the Content of 3002H to AX
9010	MOV BX, [4002]	" " "[4002]" to BX
9014	ADC AX, BX	Add with Carry of AX to BX
9016	JNC 901A	Jump if not Carry in AX
9018	INC CL	Increment CL by 1
901A	INT 3	To stop execution

### Input

3000 : 05 4000 : 06  
3001 : 20 4001 : 30  
3002 : 10 4002 : 20  
3003 : 60 4003 : 70

2005 6010  
+ 3006 7020

### Output

AX = D030  
DX = 500B

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EXPT NO.

D) finding the largest/smallest number from an array

Address Mnemonics

3000	MOV CX, 0004
3003	MOV SI, 7001
3006	MOV AL, [7000]
3009	CMP AL, [SI]
300B	JC 300F / for largest JNC 300F
300D	MOV AL, [SI]
300F	INC SI
3010	LOOP 3009
3012	INT 3

11P

7000: 01  
7001: 02  
7002: 03  
7004: 05  
7005: 07

Smallest AX = 0001  
largest AX = 08 AL = 07

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ADC 0809 interfaced with 8086 via PPI 8255A

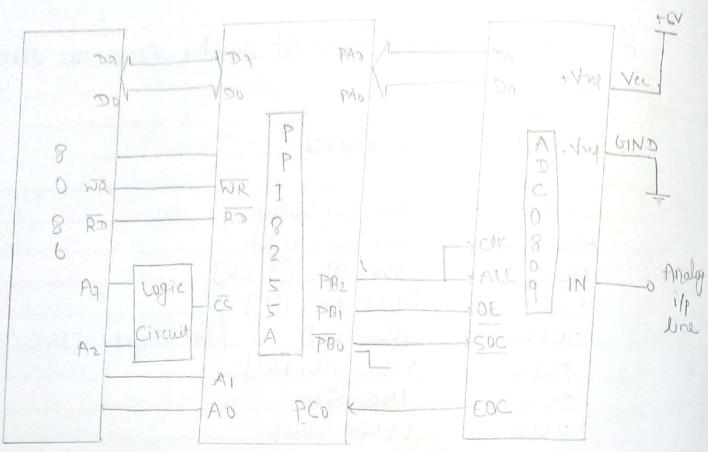


Fig - ADC 0809 interfaced with 8086 via PPI 8255A

Port Address of 8255A

	PB <sub>3</sub>	PB <sub>2</sub>	PB <sub>1</sub>	PB <sub>0</sub>	
PA → 0061H	0	0	0	0	→ 06H
PB → 0063H	0	0	0	1	→ 0AH
PC → 0065H	0	0	0	1	→ 0EH
CWR → 0067H					

Output

5V →	00F3
4V →	00C0
3V →	0090
2V →	0062
1V →	0033
0V →	0000

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### Assignment 6A

ADC, DAC and Stepper motor interfacing with 8086 microprocessor/8051 microcontroller and their programming

Address	Mnemonics	Comments
8000	MOV AL, 91	Move 91 to the AL Register
8002	MOV DX, 0067	Move 0067H to the DX Reg
8005	OUT DX, AL	AL Reg Content is Copied to the CWR
8006	MOV AL, 05	Move 05H to the AL Reg.
8008	MOV DX, 0063	Dx Reg Point to the 0063 location
800B	OUT DX, AL	AL Reg Content is copied to the Port F
800C	MOV AL, 04	Move 04H to the AL Reg.
800E	OUT DX, AL	AL Reg. Content is copied to the DX
800F	MOV DX, 0065	Dx Reg. Point to the 0065 mem. location
8012	IN AL, DX	Content of Port C is available in AL
8013	ROR AL, 1	Right Rotate of AL Contents one time
8015	JNC 8012	Jump if not Carry into 8012
8017	MOV AL, 06	Move 06H to the AL Reg.
8019	MOV DX, 0063	Dx Reg. Point to the Port B
801C	OUT DX, AL	AL content is move to the Port B
801D	MOV DX, 0061	Dx Reg. Point to the Port A
8020	IN AL, DX	Content of Port A is available in AL
8021	INT 3	To stop execution.

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