EXPERIMENT : No. PRACTICAL - 1 Page No. Date

a) Store the data byte 32H into memory location 4000H

→ Mnemonics table

Memory location	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000	MVI	A, 32H	2	3E	To move data 32H to
C001				32	accumulator
C002	STA	4000H	3	32	Load content of accumulator
C003				00	to 4000H memory location
C004				40	
C005	HLT		1	76	Stop the execution.

Output table

Before execution		After execution	
Memory loca^n	Data	Memory loca^n	Data
4000H	-	4000H	32H

Teacher's Sign. : _____

EXPERIMENT : No.

Page No.
Date

b.) Exchange the contents of memory locations 2000H & 4000H.

Memory location	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000	LDA	2000H	3	3A	Load data of memory location
C001				00	2000H to accumulator
C002				20	
C003	MOV	B,A	1	47	Move data from accumulator to register B
C004	LDA	4000H	3	3A	Load data of memory location
C005				00	4000H to accumulator
C006				40	
C007	STA	2000H	3	32	Store data of accumulator to
C008				00	memory location 2000H
C009				20	
C00A	MOV	A,B	1	78	Move data of register B to accumulator
C00B	STA	4000H	3	32	Store data of accumulator to
C00C				00	~~regist~~ memory location 4000H.
C00D				40	
C00E	HLT		1	76	Stop the execution

Output table

Before execution		After execution	
Memory loca"	Data	Memory loca"	Data
2000H	04H	2000H	06H
4000H	06H	4000H	04H

Teacher's Sign. : _____

EXPERIMENT : No.

PRACTICAL - 2

Page No.
Date

a) Subtract two 8-bit numbers.

→ Mnemonics table

Memory location	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000	MVI	A, 08H	2	3E	Move data 08H to the
C001				08	accumulator
C002	SUI	03H	2	D6	Subtract data 03H from
C003				03	accumulator
C004	HLT		1	76	Stop the execution

~~Output table~~

Sundaram

Teacher's Sign. :

EXPERIMENT : No.

Page No.
Date

b) Subtract the 16-bit number in memory location 4002H & 4003H from the 16-bit number in memory locations 4000H & 4001H. The most significant eight bits of the two numbers are in memory locations 4001H & 4003H. Store the result in memory locations 4000 4004H & 4005H with the most significant byte in memory location 4005H

→ Mnemonics table

Memory location	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000	LDA	4000H	3	3A	Load accumulator with the content
C001				00	of memory location 4000H
C002				40	(i.e A = 04H)
C003	LXI	H, 4002H	3	21	Load HL register pair with the content
C004				02	of memory location ~~200~~ 4002H
C005				40	
C006	SUB	M	1	96	Subtract data of HL pair from accumulator
C007	STA	4004H	3	32	Store the data of ~~memory location~~
C008				04	accumulator at memory location 4004H
C009				40	
C00A	LDA	4001H	3	3A	Load the accumulator with the data of
C00B				01	memory location 4001H
C00C				40	
C00D	INX	H	1	23	Increment HL register pair by 1
C00E	SUB	M	1	96	Subtract data of HL pair from accumulator
C00F	STA	4005H	3	32	Store the data of accumulator at
C010				05	memory location 4005H
C011				40	
C012	HLT		1	76	Stop the execution

Teacher's Sign. :

Output table :

Before execution		After execution	
Memory loca^n	Data	Memory loca^n	Data
400H	04	4004H	02 H
4002H	02H	4005H	03H
4001 H	06H		
4003H	03H		

EXPERIMENT : No.

Page No.
Date

c) Find the 1's complement of the number stored at memory location 4400H and store the complemented number at memory location 4300H.

→ Mnemonics table

Memory location	Mnemonics Opcode	Mnemonics Operand	Byte size	Hex code	Description
C000	LDA	4400H	3	3A	Load accumulator with the content
C001				00	of memory location 4400H
C002				44	
C003	CMA		1	2F	Compliment the data of accumulator
C004	STA	4300H	3	32	Store the data of accumulator
C005				00	at memory location 4300H
C006				43	
C007	HLT		1	76	Stop the execution

Output table

Before execution		After ~~exuti~~ execution	
Memory loca^n	Data	Memory loca^n	Data
4400H	02H	4400H	02H
4300H	-	4300H	FD H

Sundaram

Teacher's Sign. :

EXPERIMENT : No.

Page No.
Date

d) Find the 2's complement of the numbers stored at memory location 4200H & store the complemented number at memory location 4300H.

→ Mnemonics table

Memory location	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000	LDA	4200H	3	3A	To load data of memory location
C001				00	4200H to accumulator
C002				42	
C003	CMA		1	2F	To compare the data
C004	ADI	01H	2	C6	Add 8-bit data to accumulator
C005				01	
C006	STA	4300H	3	32	Store data of accumulator to
C007				00	memory location 4300H
C008				43	
C009	HLT		1	76	Stop the execution

Output table:

Before execution		After execution	
Memory loca^n	Data	Memory loca^n	Data
4200H	02H	4200H	02H
4300H	00H	4300H	FEH

Sundaram

Teacher's Sign. : _____

EXPERIMENT : No. PRACTICAL - 3 Page No. Date

a) Pack the two unpacked BCD numbers stored in memory locations 4200H & 4201H & store result in memory location 4300H. Assume the least significant digit is stored at 4200H.

→ Mnemonics table

Memory location	Mnemonics Opcode	Mnemonics Operand	Byte size	Hex code	Description
C000	LDA	4200H	3	3A	Load data of memory location
C001				00	4200H to accumulator
C002				42	
C003	MOV	B, A	1	47	Move data of accumulator to register B
C004	LDA	4201H	3	3A	Load data of memory location
C005				01	4201H to accumulator
C006				42	
C007	RRC		1	0F	Rotate data of accumulator to right 1-bit
C008	RRC		1	0F	Rotate data of accumulator to right 1-bit
C009	RRC		1	0F	Rotate data of accumulator to right 1-bit
C00A	RRC		1	0F	Rotate data of accumulator to right 1-bit
C00B	ADD	B	1	80	Add data of register B & accumulator
C00C	STA	4300H	3	32	Store data of accumulator to the
C00D				00	memory location 4300H
C00E				43	
C00F	HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

Output table :

Before execution		After execution	
Memory loca^n	Data	Memory loca^n	Data
4200H	02H	4300H	32H
4201H	03H		
4300H	00H		

EXPERIMENT : No.

Page No.
Date

b) Two digit BCD number is stored in memory location 4200H. Unpack the BCD number & store the two digits in memory locations 4300H & 4301H, such that memory location 4300H will have lower BCD digit.

→ Mnemonics table

Memory location	Mnemonics Opcode	Mnemonics Operand	Byte size	Hex code	Description
C000	LDA	4200H	3	3A	Load data of memory location
C001				00	4200H to accumulator
C002				42	
C003	ANI	0FH	2	E6	Performs logical AND between data of
C004				0F	accumulator & data 0FH.
C005	STA	4300H	3	32	Store data of accumulator to the
C006				00	memory location 4300H.
C007				43	
C008	LDA	4200H	3	3A	Load data of memory location to
C009				00	4200H to accumulator
C00A				42	
C00B	ANI	F0H	2	E6	Perform logical AND between data of
C00C				F0	accumulator & data F0H.
C00D	RRC		1	0F	Rotate data of accumulator to the right by 1-bit.
C00E	RRC		1	0F	Rotate data of accumulator to the right by 1-bit
C00F	RRC		1	0F	Rotate data of accumulator to the right by 1-bit
C010	RRC		1	0F	Rotate data of accumulator to the right by 1-bit
C011	STA	4301H	3	32	Store data of accumulator to the
C012				01	memory location 4301H.
C013				43	
C014	HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

Output table:

Before execution		After execution	
Memory locaⁿ	Data	Memory locaⁿ	Data
4200H	23H	4300H	03H
		4301H	02H

EXPERIMENT: No.

PRACTICAL - 4

Page No.
Date

a) Write a program to shift an eight bit data four bits right. Assume that data is in register C.

→ Mnemonics table

Memory location	Mnemonics		Byte size	Hex code	Description
	Opcode	Operand			
C000	MVI	C, 05H	2	0E	Move data 05H to register C
C001				05	
C002	MOV	A, C	1	79	Move data of register C to accumulator
C003	RRC		1	0F	Rotate data of accumulator to the right by 1-bit
C004	RRC		1	0F	Rotate data of accumulator to the right by 1-bit
C005	RRC		1	0F	Rotate data of accumulator to the right by 1-bit
C006	RRC		1	0F	Rotate data of accumulator to the right by 1-bit
C007	HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

EXPERIMENT : No.

Page No.
Date

b) Program to shift a 16-bit data 1 bit left. Assume data is in the HL register pair.

→ Mnemonics table

Memory location	label	Mnemonics		Byte size	Hex code	Description
		Opcode	Operand			
C000		STC		1	37	Set the carry / reset
C001		CMC		1	3F	Complement the carry
C002		MOV	A, H	1	7C	Move data from HL pair to ^ accumulator
C003		RAL		1	17	Rotate content of accumulator 1-bit left with carry
C004		JNC	DOWN/C008	3	D2	If no carry generated,
C005					08	jump to specified address.
C006					C0	
C007		INR	L	1	2C	Increment register L by 1
C008	DOWN:	HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

EXPERIMENT : No.

Page No.
Date

c) Write a set of instructions to alter the contents of flag register in 8085.

→ Mnemonics table

Memory location	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000	MVI	A, 02H	2	0E	Move data 02H to the accumulator
C001				02	
C002	STC		1	37	Set/reset the carry
C003	CMC		1	3E	Complement the carry
C004	XRA	A	1	AF	Perform logical EX-OR of accumulator with accumulator
C005	ADI	03H	2	C6	Add 8-bit data 03H
C006				03	to accumulator
C007	SBI	04H	2	DE	Subtract 8-bit data 04H
C008				04	from accumulator.
C009	HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

EXPERIMENT: No.

Page No.
Date

d.) Write a program to count number of 1's in the contents of D register and store the count in the B register.

→ Mnemonics table

Memory locations	label	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C00D		MVI	D, 03H	2	16	Move 8-bit data 03H to
C00I					03	register D
C002		MOV	A, D	1	7A	move data of register D to accumulator
C003		MVI	B, 00H	2	06	Move 8-bit data 00H to
C004					00	register B
C005		MVI	C, 08H	2	0E	Move 8-bit data 08H to
C006					08	register C
C007	UP:	RAR		1	1F	Rotate content of accumulator to the right 1 bit with carry
C008		JNC	DOWN/C00C	3	D2	If no carry generated,
C009					0C	jump to specified address.
C00A					C0	
C00B		INR	B	1	04	Increment register B by 1
C00C	DOWN:	DCR	C	1	0D	Decrement register C by 1
C00D		JNZ	UP/C007	3	C2	If no zero generated,
C00E					07	jump to specified address.
C00F					C0	
C010		HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. :

EXPERIMENT : No. PRACTICAL - 5

Page No. Date

a.) Calculate the sum of series of numbers. The length of the series is in memory location 4200H & the series begins from memory location 4201H.
i) Consider the number to be 8-bit number. So ignore carries. Store the sum at memory location 4300H.

→ Mnemonics table

Memory locations	label	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000		LXI	H, 4200H	3	21	Load register pair HL with
C001					00	memory location 4200H
C002					42	
C003		MOV	C, M	1	4E	Move data of HL register pair to register C
C004		XRA	A	1	AF	Perform logical EXOR of accumulator with itself
C005	UP:	INX	H	1	23	Increment register pair HL by 1
C006		ADD	M	1	86	Add data of HL register pair with accumulator
C007		DCR	C	1	0D	Decrement register C by 1
C008		JNZ	UP/C005	3	C2	If no zero generated,
C009					05	jump to specified address.
C00A					C0	
C00B		STA	4300H	3	32	Store content of
C00C					00	accumulator to memory
C00D					43	location 4300H.
C00E		HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

Output table :

Before execution		After execution	
Memory loca^n	Data	Memory loca^n	Data
4200 H	05H	4300H	0F H
4201 H	01 H		
4202 H	02H		
4203 H	03H		
4204 H	04H		
4205H	05H		

EXPERIMENT : No.

Page No.
Date

ii) Consider the sum to be 16-bit number. Store the sum at memory location 4300H & 4301H

Memory location	label	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000		LXI	H, 4200H	3	21	Load register pair HL
C001					00	with memory location
C002					42	4200H
C003		MOV	C, M	1	4E	Move content of HL pair to register C
C004		XRA	A	1	AF	Perform logical EX-OR of accumulator with itself
C005	UP:	MOV	B, A	1	47	Move content of accumulator to register B.
C006		INX	H	1	23	Increment register pair HL by 1
C007		ADD	M	1	86	Add content of HL register pair with accumulator
C008		JNC	DOWN/C00B	3	D2	If no carry generated,
C009					0B	jump to specified address
C00A					C0	
C00B	DOWN:	INR	B	1	04	Increment register B by 1
C00C		DCR	C	1	0D	Decrement register C by 1
C00D		JNZ	UP/C005	3	C2	If no zero generated,
C00E					05	jump to specified address
C00F					C0	
C010		STA	4300H	3	32	Store content of accumulator
C011					00	to memory location 4300H
C012					43	
C013		MOV	A, B	1	78	move content of register B to accumulator.
C014		STA	4301H	3	32	Store content of accumulator
C015					01	to memory location 4301H
C016					43	
C017		HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. :

Output table:

Before execution		After execution	
Memory locaⁿ	Data	Memory locaⁿ	Data
4200H	05H	4300H	OFH
4201H	01H	4301H	00H
4202H	02H		
4203H	03H		
4204H	04H		
4205H	05H		

EXPERIMENT : No.

Page No.
Date

b) Multiply two 8-bit numbers stored in memory locations 2200H & 2201H by repetitive addition & store the result in memory locations 2300H & 2301H

Memory locations	label	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000		LXI	H, 2200H	3	21	Load register pair HL
C001					00	with memory location
C002					22	2200H
C003		MOV	C, M	1	4E	move content of HL pair to register C
C004		INX	H	1	23	Increment register pair HL by 1
C005		MOV	B, M	1	46	move content of HL pair to register B
C006		XRA	A	1	AF	perform logical EXOR of accumulator with itself
C007		MOV	D, A	1	57	move content of accumulator to register D
C008	UP:	ADD	B	1	80	Add content of register B with accumulator
C009		JNC	DOWN/C00D	3	D2	If no carry generated,
C00A					0D	jump to specified address.
C00B					C0	
C00C		INR	D	1	14	Increment register D by 1
C00D	DOWN:	DCR	C	1	0D	Decrement register C by 1
C00E		JNZ	UP/C008	3	C2	If no zero generated,
C00F					08	jump to specified address.
C010					C0	
C011		STA	2300H	3	32	Store content of accumulator
C012					00	to memory location 2300H
C013					23	
C014		MOV	A, D	1	7A	Move content of register D to accumulator
C015		STA	2301H	3	32	Store content of accumulator
C016					01	to memory location 2301H
C017					23	
C018		HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

Output table:

Before execution		After execution	
Memory loca^n	Data	Memory loca^n	Data
2200H	03H	2300H	0FH
2201H	05H	2301H	00H

EXPERIMENT : No.

Page No.
Date

c) Divide 16-bit number stored in memory locations 2200H & 2201H. by the 8-bit number stored at memory location 2202H. Store the quotient in memory locations 230DH & ~~230H~~ 2301H & remainder in 2302H & 2303H.

Memory locations	label	Mnemonics		Byte size	Hex code	Description
		Opcode	Operand			
C000		LXI	H, 2200H	3	21	Load HL register pair with
C001					00	memory location 2200H
C002					22	
C003		MOV	A, M	1	7E	Move content of HL pair to accumulator
C004		INX	H	1	23	Increment register pair H by 1
C005		MOV	B, M	1	46	Move content of HL pair to register B.
C006		MVI	C, 00H	2	0E	~~Move~~ Move 8-bit data 00H to
C007					00	register C
C008	UP:	SUB	B	1	90	Subtract content of register B from accumulator
C009		CMP	B	1	B8	Compare content of register B with accumulator
C00A		INR	C	1	0C	Increment register C by 1
C00B		JNC	UP/C008	3	D2	If no carry generated,
C00C					08	jump to specified address
C00D					C0	
C00E		STA	2300H	3	32	Store content of accumulator
C00F					00	to memory location 2300H
C010					23	
C011		MOV	A, C	1	79	Move content of register C to accumulator
C012		STA	2301H	3	32	Store content of accumulator
C013					01	to memory location ~~2300H~~
C014					23	2301H
C015		HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

Output table :

Before execution		After execution	
Memory loca^n	Data	Memory loca^n	Data
2200 H	07H	2300H	01H
2201H	02H	2301 H	03H

EXPERIMENT : No. PRACTICAL - 6

Page No.
Date

b.) Calculate the sum of series of even numbers from the list of numbers. The length of the list is in memory location 2200H & the series begins from 2201H. Assume the sum to be 8-bit number so ignore carries and store the sum at memory location 2300H.

Memory locations	label	Mnemonics		Byte size	Hex code	Description
		Opcode	Operand			
C000		LXI	H, 2200H	3	21	Load register pair HL
C001					00	with memory location 2200H
C002					22	
C003		MOV	C, M	1	4E	move content of HL pair to register C
C004		MVI	B, 00H	2	06	move 8 bit data 00H to register B
C005					00	
C006		INX	H	1	23	Increment register pair HL by 1
C007	UP:	MOV	A, M	1	7E	move content of HL pair to accumulator
C008		RAR		1	1F	move content of accumulator to right 1-bit with carry
C009		JC	DOWN/C00E	3	DA	If carry generated,
C00A					0E	jump to specified address
C00B					C0	
C00C		ADD	B	1	80	Add content of register B to accumulator
C00D		MOV	B, A	1	47	move content of accumulator to register B
C00E	DOWN:	INX	H	1	23	Increment register pair HL by 1
C00F		DCR	C	1	0D	Decrement register C by 1
C010		JNZ	UP/C007	3	C2	If no zero generated,
C011					07	jump to specified address
C012					C0	
C013		MOV	A, B	1	78	move content of register B to accumulator
C014		STA	2300H	3	32	Store content of accumulator
C015					00	to memory location
C016					23	2300H
C017		HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

Output table :

Before execution		After execution	
Memory locaⁿ	Data	Memory locaⁿ	Data
2200H	05H	2300H	06H
2201H	01H		
2202H	02H		
2203H	03H		
2204H	04H		
2205H	05H		

EXPERIMENT : No. PRACTICAL - 7

Page No. Date

a) A list of numbers is stored in memory starting at 6000H. Find number of negative, zero and positive numbers from this list and store these results in locations 7000H, 7001H & 7002H respectively.

→ Mnemonics table

Memory locations	label	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000		LXI	H, 6000H	3	21	Load HL register pair with
C001					00	memory location 6000H
C002					60	
C003		MVI	C, 00H	2	0E	Initialize register C to 00H
C004					00	
C005		MVI	B, 00H	2	06	Initialize register B to 00H
C006					00	
C007		MVI	E, 00H	2	1E	Initialize register E to 00H
C008					00	
C009	START:	MOV	A, M	1	7E	Move content of HL register pair to accumulator
C00A		CPI	00H	2	FE	Compare data of accumulator
C00B					00	with 00H
C00C		JZ	ZERONUM	3	CA	If zero generated, jump to
C00D					18	specified label
C00E					C0	
C00F		ANI	80H	2	E6	Perform logical AND between content
C010					80	of accumulator & 8-bit data 80H
C011		JNZ	NEGNUM	3	C2	If no zero generated, jump
C012					1C	to specified label
C013					C0	

Sundaram

Teacher's Sign. : _____

EXPERIMENT : No.

Page No.
Date

Memory locations	label	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C014		INR	D	1	14	Increment register D by 1
C015		JMP	LAST	3	C3	Jump to specified label
C016					1D	
C017					C0	
C018	ZERO NUM:	INR	E	1	1C	Increment register E by 1
C019		JMP	LAST	3	C3	Jump to specified label
C01A					1D	
C01B					C0	
C01C	NEG NUM:	INR	B	1	04	Increment register B by 1
C01D	LAST:	INX	H	1	23	Increment HL pair by 1
C01E		INR	C	1	0C	Increment register C by 1
C01F		MOV	A, C	1	79	Move content of register C to accumulator
C020		CPI	32H	2	FE	Compare data of ~~to~~ accumulator
C021					32	with data 32H
C022		JNZ	START	3	C2	If no zero generated, jump to
C023					09	specified label
C024					C0	
C025		LXI	H, 7000H	3	21	Load HL register pair with
C026					00	memory location 7000H
C027					70	
C028		MOV	M, B	1	70	Move content of register B to HL pair
C029		INX	H	1	23	Increment HL pair by 1
C02A		MOV	M, B	1	70	Move content of register B to HL pair
C02B		INX	H	1	23	Increment HL pair by 1
C02C		MOV	M, D	1	72	Move content of register D to HL register pair
C02D		HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

Output table:

Before execution		After execution	
Memory locaⁿ	Data	Memory locaⁿ	Data
6000H	00H	7000H	02H
6001H	81H	7001H	02H
6002H	82H	7002H	02H
6003H	07H		
6004H	04H		
6005H	00H		

EXPERIMENT : No.

Page No.
Date

b) Write an assembly language program to generate fibonacci numbers.

→ Mnemonics table

Memory locations	label	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C000		LXI	H, C030H	1	21	Load register pair HL with
C001					30	the memory location C030H
C002					C0	
C003		MVI	D, 0AH	2	16	Move data 0AH to register D
C004					0A	
C005		MVI	B, 00H	2	06	Initialize register B to 00H
C006					00	
C007		MVI	C, 01H	2	0E	Initialize register C to 01H
C008					01	
C008		MOV	A, B	1	78	move content of register B to accumulator
C009	UP:	ADD	B	1	80	Add data of register B with accumulator
C00A		MOV	M, A	1	77	Move data of accumulator to HL pair
C00B		MOV	B, C	1	41	Move content of register C to register B
C00C		MOV	C, A	1	4F	Move content of accumulator to register C
C00D		INX	H	1	23	Increment HL register pair by 1
C00E		DCR	D	1	15	Decrement register D by 1
C00F		JNZ	UP	3	C2	If no zero generated, jump
C010					09	to specified label
C011					C0	
C012		HLT		1	76	Stop the execution

Sundaram

Teacher's Sign. : _____

Output table :

Before execution		After execution	
Memory locaⁿ	Data	Memory locaⁿ	Data
C030H	00H	C030H	001H
C031H	00H	C031H	01H
C032H	00H	C032H	01H
C033H	00H	C033H	02H
C034H	00H	C034H	03H
C035H	00H	C035H	05H
C036H	00H	C036H	08H
C037H	00H	C037H	0DH
C038H	00H	C038H	16H
C039H	00H	C039H	22H
C03AH	00H	C03AH	27H

EXPERIMENT : No.

Page No.
Date

c) Program to calculate the factorial of a number between 0 & 8.

→ Mnemonics table:

Memory locations	label	Mnemonics		Byte size	Hex code	Description
		Opcode	Operand			
C000		LDA	3250H	3	3A	Load accumulator with
C001					50	memory location 3250 H
C002					32	
C003		CPI	02H	2	FE	Compare data of accumulator
C004					02	with data 02H
C005		JC	DOWN	3	DA	If carry generated, jump
C006					15	to specified label
C007					C0	
C008		MOV	E, A	1	5F	move content of accumulator to register E
C009		MVI	D, 00H	2	16	Initialize register D to 00H
C00A					00	
C00B		DCR	A	1	3D	Decrement content of accumulator by 1
C00C		CALL	FACTO	3	CD	Call specified sub-routine
C00D					1C	
C00E					C0	
C00F		SHLD	3251H	3	22	Store content of HL pair to
C010					51	memory location 3251H & its
C011					32	consecutive location
C012		JMP	END	3	C3	Jump to specified label
C013					1B	
C014					C0	
C015	DOWN:	LXI	H, 0001H	3	21	Load HL register pair with the

Teacher's Sign. :

Sundaram

EXPERIMENT : No.

Page No.
Date

Memory location	label	Mnemonics Opcode	Operand	Byte size	Hex code	Description
C016					01	memory location 0001H
C017					00	
C018		SHLD	3251H	3	22	Store content of HL pair to the
C019					51	memory location 3251H & its
C01A					32	consecutive location
C01B	END:	HLT		1	76	Stop the execution
C01C	FACTO:	LXI	H, 0000H	3	21	Load HL register pair with
C01D					00	memory location 0000H
C01E					00	
C01F		MOV	C, A	1	4F	Move content of accumulator to register C
C020	UP:	DAD	D	1	19	Perform addition of data of DE and HL register pairs
C021		DCR	C	1	0D	Decrement register c by 1
C022		JNZ	UP	3	C2	If no zero generated, jump
C023					20	to specified label
C024					C0	
C025		XCHG		1	EB	Exchange content of HL pair with DE
~~20~~ C026		DCR	A		3D	Decrement accumulator by 1
C027		CNZ	FACTO		C4	If no zero generated, jump
C028					1C	to specified label
C029					C0	
C02A		RET		1	C9	Return program to command after the CALL instruction

Sundaram

Teacher's Sign. : _____

Output table:

Before execution		After execution	
Memory locan	Data	Memory locan	Data
3250H	04H	3251H	18H
		3252H	00H