WEST BENGIAL STATE UNIVERSITY

REGISTRATION NO :- 107131110060 of 2017

ROLL - 32011134 NO - 19162

SUBJECT - MICROPROCESSOR PRACTICAL

PART - III PAPER - VII

Index

Sl. No.	Name of the Experiment	Page No.	Date of Experiment	Date of Submission	Re
1)	An ALP to add three no.	1-2			
2)	Perform AND, OR, XOR NAND, NOR, XNOR	3-5			
3)	Add two 16 bit numbers	6-7			
4)	Pack two BCD numbers	8-9			
5)	Unpack two " "	10-11			
6)	Data transfer from one memory block to another	12-14			
7)	An ALP to find the factorial of a number	15-17			
8)	An ALP to generate fibonacci series	18-20			
9)	A number is palindrome or not	21-22			
10)	An ALP to count the numbers of 1's in 8bit number.	23-25			
11)	Divide 16 bit no by 8 bit	26-29			
12)	Linear search	30-31			

Experiment Name : ~~Assignment-11~~

Page No. 26
Date :

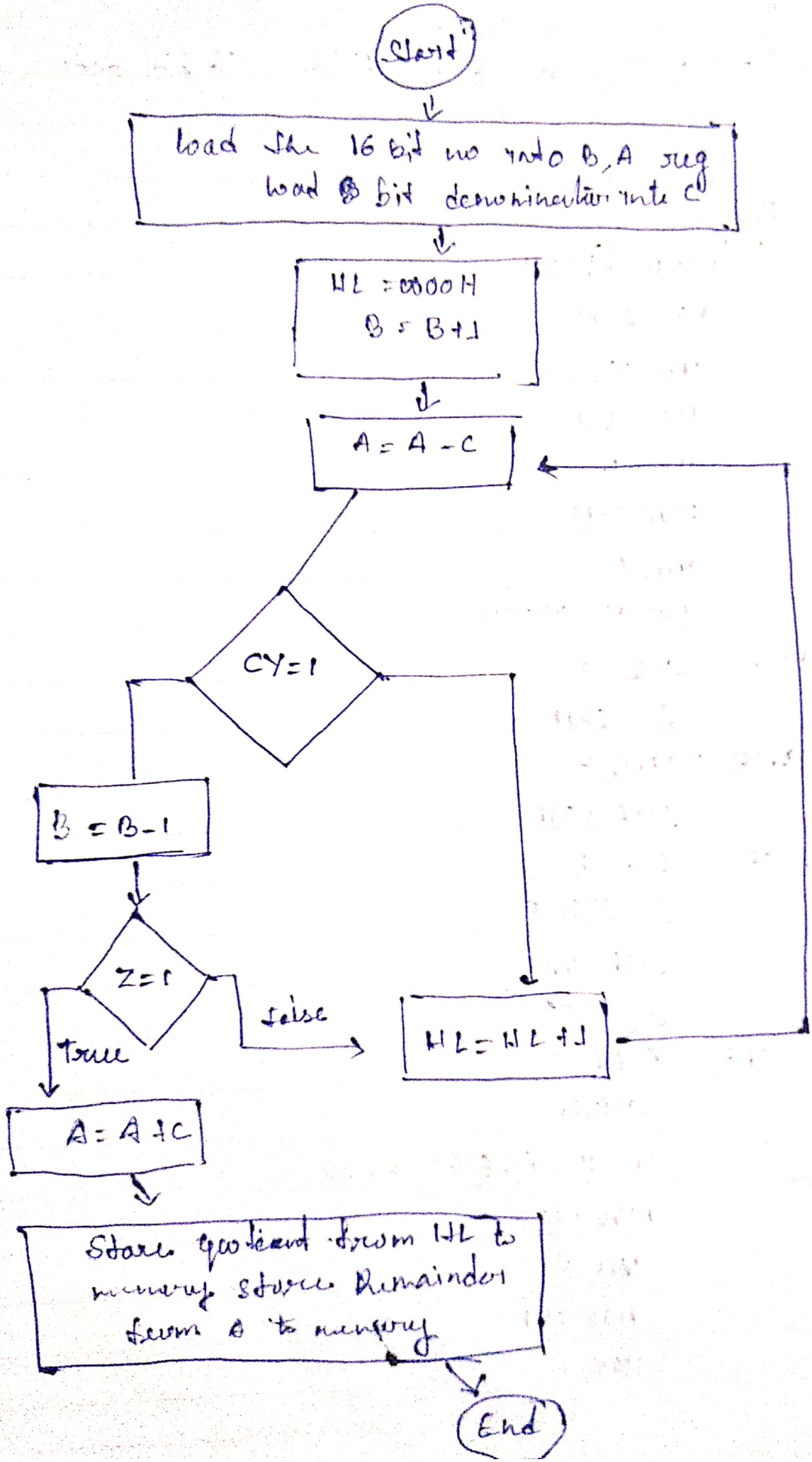
CLASS NOTE

□ Problem statement – Write an ALP divide 16 bit data by 8 bit.

□ Assembly level Program –

```
        LXI H E300H
        MOV A, M
        INX H
        MOV B, M
        INX H
        MOV C, M
        INR B
        LXI H, 0000H
LOOP:   SUB C
        JC SKIP
INCR:   INX H
        JMP LOOP
SKIP    DCR B
        JZ STORE
        JMP INCR
        ~~JZ STORE~~
STORE   ADD C
        XCHG
        LXI H, ~~E3050H~~ E350
        MOV M, E
        INX H
        MOV M, D
        INX H
```

Teacher's Signature & Date : .....



Experiment Name :

Page No. 27
Date :

CLASS NOTE

□ Assembly level :- MOV H, A

HLT

□ Table form :-

Address	OPCode	Labels	Mnemonics	Comments
E200	21		LXI, E300H	Point E300H address
E201	00			
E202	E3			
E203	7E		MOV A,M	Store the lower byte
E204	23		INX H	Increase the HL pair to next Loc
E205	46		MOV B,M	Store the higher order byte
E206	23		INX H	Increase the HL pair
E207	4E		MOV C,M	load the denominator
E208	04		INR B	Increase B register
E209	21		LXI H 0000H	store 0000H into HL
E20A	00			
E20B	00			
E20C	91	LOOP	SUB C	Subtract C from acc
E20D	DA		JC SKIP	JUMP to SKIP when CY=1
E20E	14			
E20F	F0			
E210	23	INCR	INX H	Increase quotient Part
E211	C3		JMP LOOP	JUMP to LOOP
E212	0C			
E213	F0			
E214	05	SKIP	DCR B	Decrease B
E215	CA		JNZ STORE	Jump to STORE when≠1

Teacher's Signature & Date : .....

Experiment Name :

Page No. 28
Date :

CLASS NOTE

Address	OPCode	label	Mnemonic	Comments
E206	JB			
E217	FO			
E218	C5		JMP INCR	JUMP to INCR
E219	10			
E21A	FO			
E21B	81	STORE	ADD C	Add C with ACC
E21C	EB		XCHG	swap DE and HL pair
E21D	21		LXI H, E350H	Load destination add.
E21E	50			
E21F	80			
E220	73		MOV M, D	store the ~~Higher~~ lower
E221	23		INX H	Increase HL pair
E222	72		MOV M, D	Store the higher
E223	23		INX H	Increase HL
E224	77		MOV M, A	store the remainder
E225	76		HLT	

Result

Input	E200	E300	1B	Output	E350	CF
		E301	CA		E351	02
		E302	53		E352	2E

Discussion - We are taking the 16 bit number from E300 H and E301 H. The E300 is holding the lower order byte and E301 H is holding higher order byte. The E302 H is holding the 8-bit numerator.

Teacher's Signature & Date : .....

Experiment Name :

Page No. 29
Date :

CLASS NOTE

After dividing the number the 16-bit quotient is stored at location ~~E350H~~ and ~~E351~~ E350H and E351H. The remainder is stored at E352H.

Teacher's Signature & Date :

Experiment Name :

Page No. 30
Date :

CLASS NOTES

1) Problem Statement - Write an ALP to implement Linear search technique.

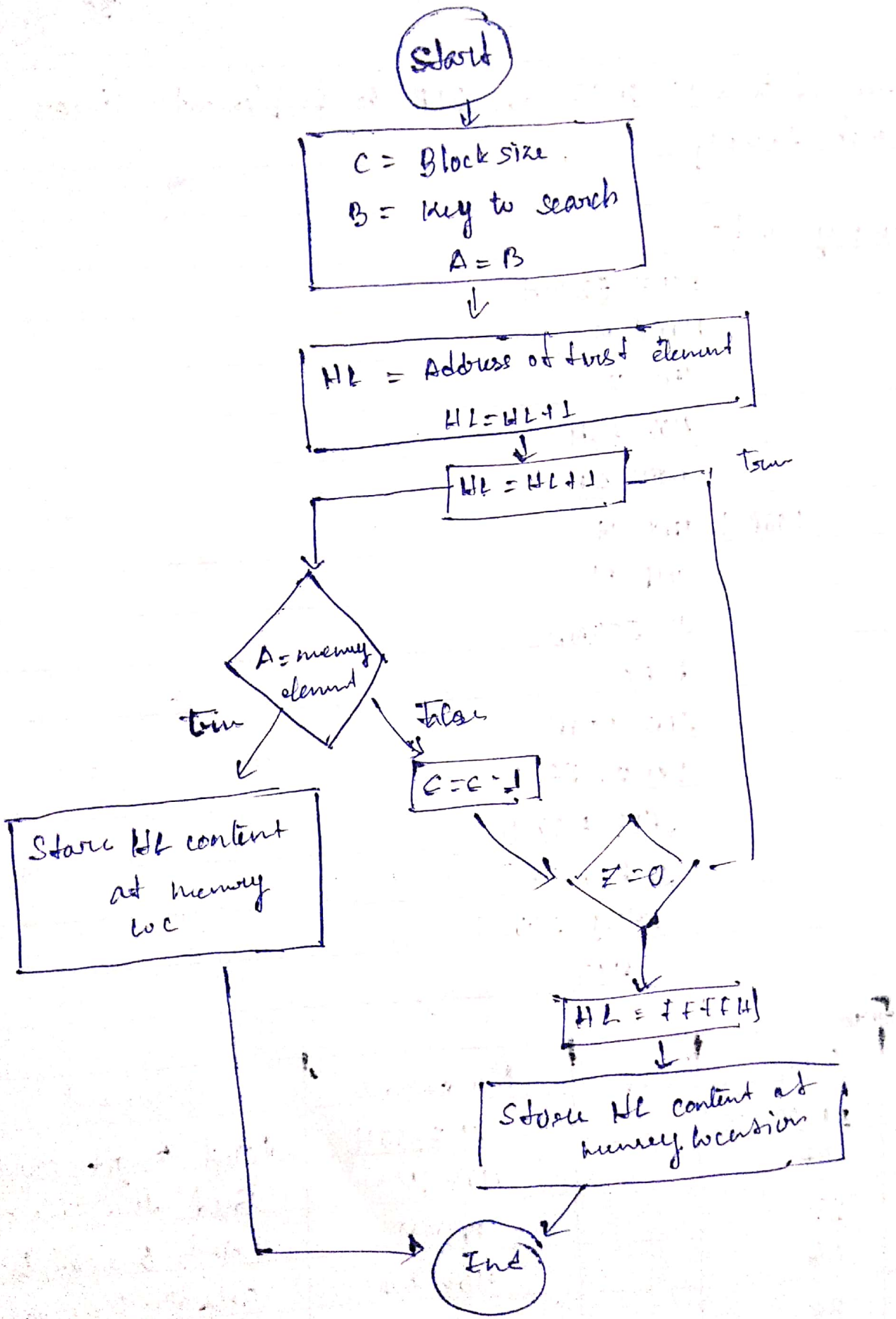
2) Assembly level -

```
        LXI H E300H
        MOV C, M
        INX H
        MOV B, M
        MOV A, B
LOOP :  INX H
        CMP M
        JZ FOUND
        DCR C
        JNZ LOOP
        LXI H, FFFF
        SHLD E400H
        JMP DONE
FOUND : SHLD E400H
DONE :  HLT
```

3) Table Form

Address	Opcode	Label	Mnemonics	Comment
E200	21, 00, 80		LXI E300H	Point to get array size
E203	4E		MOV C, M	Count the size of array
E204	23		INX H	Point to next location
E205	46		MOV B, M	Get the key value to
E206	78		MOV A, B	Take the key into acc
E207	23	LOOP	INX H	Point to next location

Teacher's Signature & Date : .....



Experiment Name :

Page No. 81
Date :

Address	OPCode	labels	Mnemonics	Comments
E208	BE		CMP M	COMPARE memory ele with acc
E209	CA, 19, F0		JZ FOUND	When z flag is set go to
E20B	0D		DCR C	Decrease C by 1
E20D	C2, 02, F0		JNZ LOOP	When Count is not 0 jump
E210	21, FF, FF		LXI H, FFFF	Load FFFF into HL pair
E213	12, 00, 96		SHLD E900	Store at E900H
E216	C3, 1C, F0		JMP DONE	Jump to DONE
E219	22, 00, 90	FOUND	SHLD 9000H	Store at E400H
E21C	76	DONE	HLT	Terminate the prog

Result -

Input			Output		
	E300	06		E400	06
	E301	55		E401	80
	E302	11			
	E303	22			
	E304	33			
	E305	44			
	E306	55			
	E307	66			

Discussion The datas are store location E300H to E307H The E300H is containing the size of the blocks and E3001H is holding the key value to search. After executing this program. It will return the address of the data where the item is found and store the address at location E400H and E401H. If the item is not found, It will write FF

Teacher's Signature & Date : .....