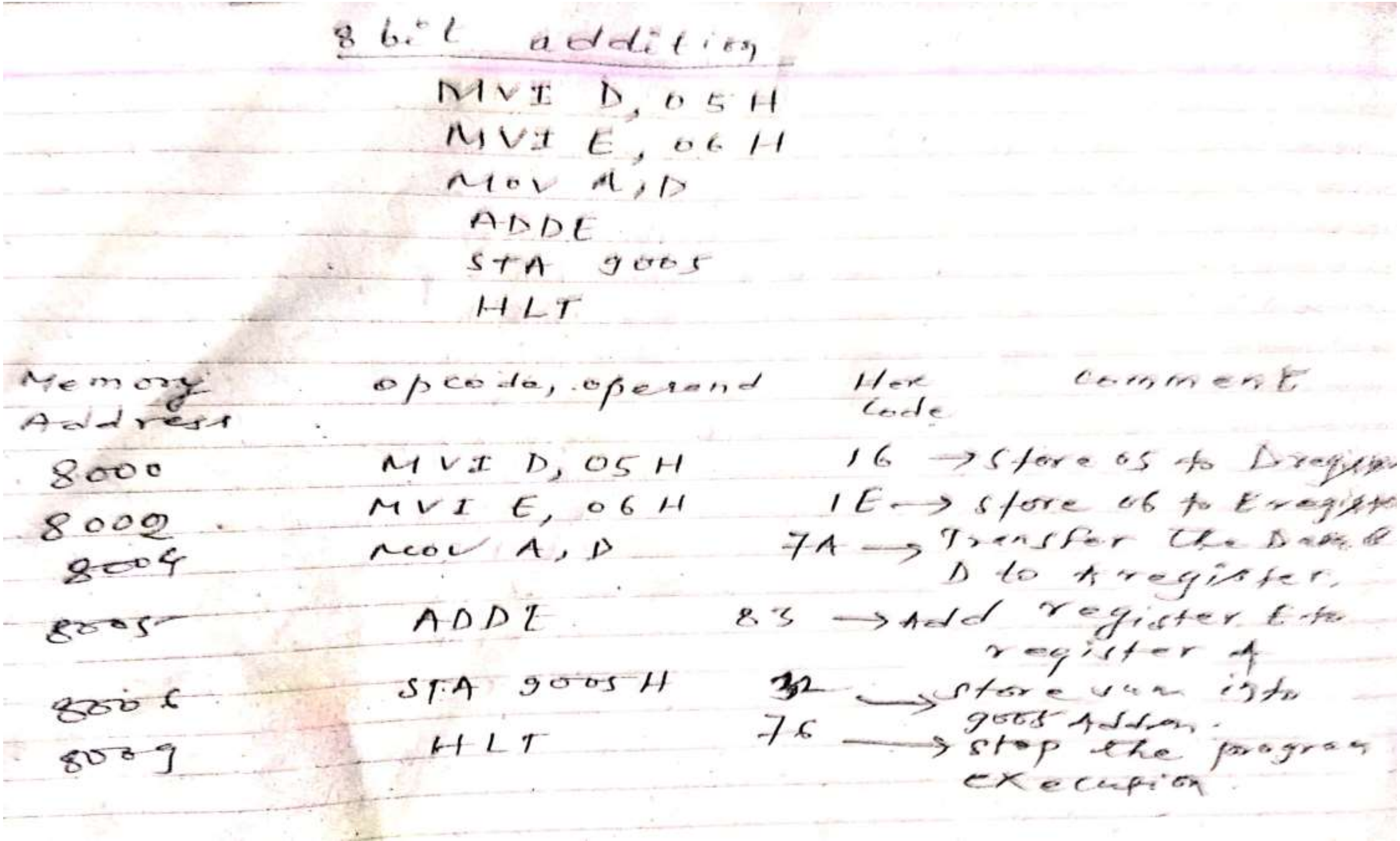
Microprocessor Program

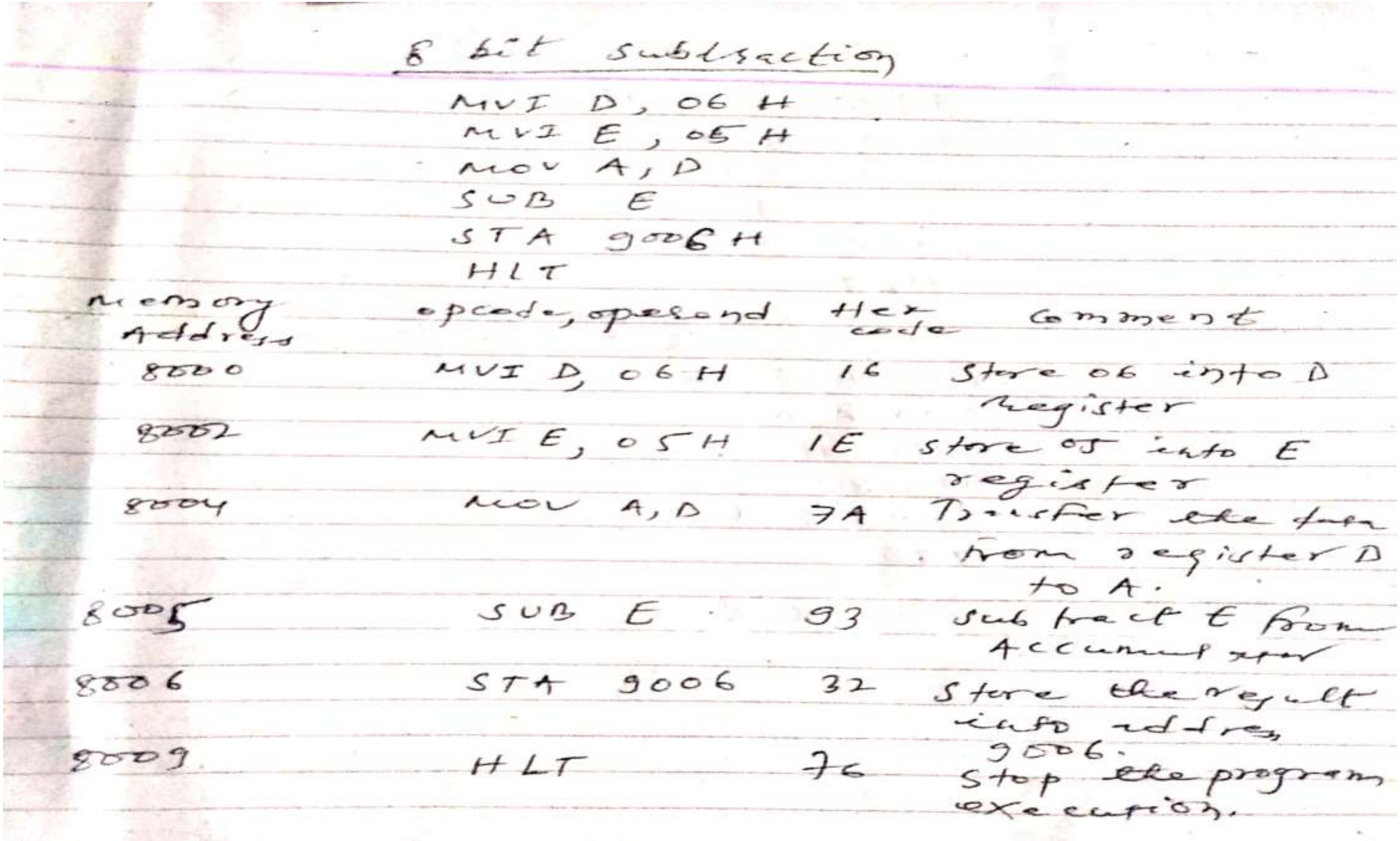


8 bit addition

```
MVI D, 05H
MVI E, 06H
MOV A, D
ADD E
STA 9005
HLT
```

Memory Address	opcode, operand	Hex code	comment
8000	MVI D, 05H	16	→ Store 05 to D register
8002	MVI E, 06H	1E	→ store 06 to E register
8004	MOV A, D	7A	→ Transfer the Data of D to A register.
8005	ADD E	83	→ Add register E to register A
8006	STA 9005H	32	→ store sum into 9005 Addres.
8009	HLT	76	→ stop the program execution.

Microprocessor Program

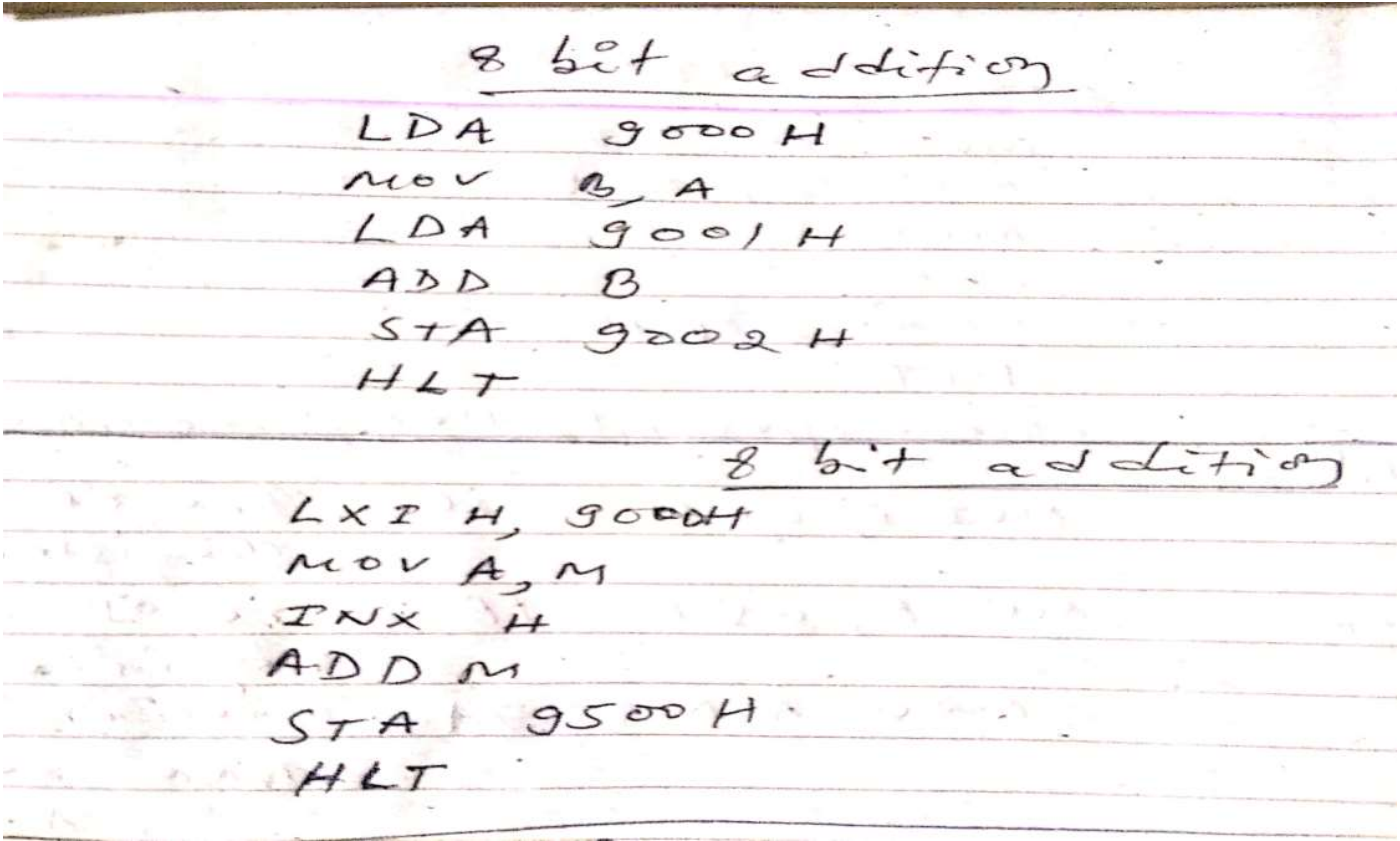


8 bit Sublsaction

```
MVI D, 06 H
MVI E, 05 H
MOV A, D
SUB E
STA 9006 H
HLT
```

Memory Address	opcode, operand	Hex code	Comment
8000	MVI D, 06 H	16	Store 06 into D register
8002	MVI E, 05 H	1E	store 05 into E register
8004	MOV A, D	7A	Transfer the data from register D to A.
8005	SUB E	93	Subtract E from Accumulator
8006	STA 9006	32	Store the result into address 9006.
8009	HLT	76	Stop the program execution.

Microprocessor Program



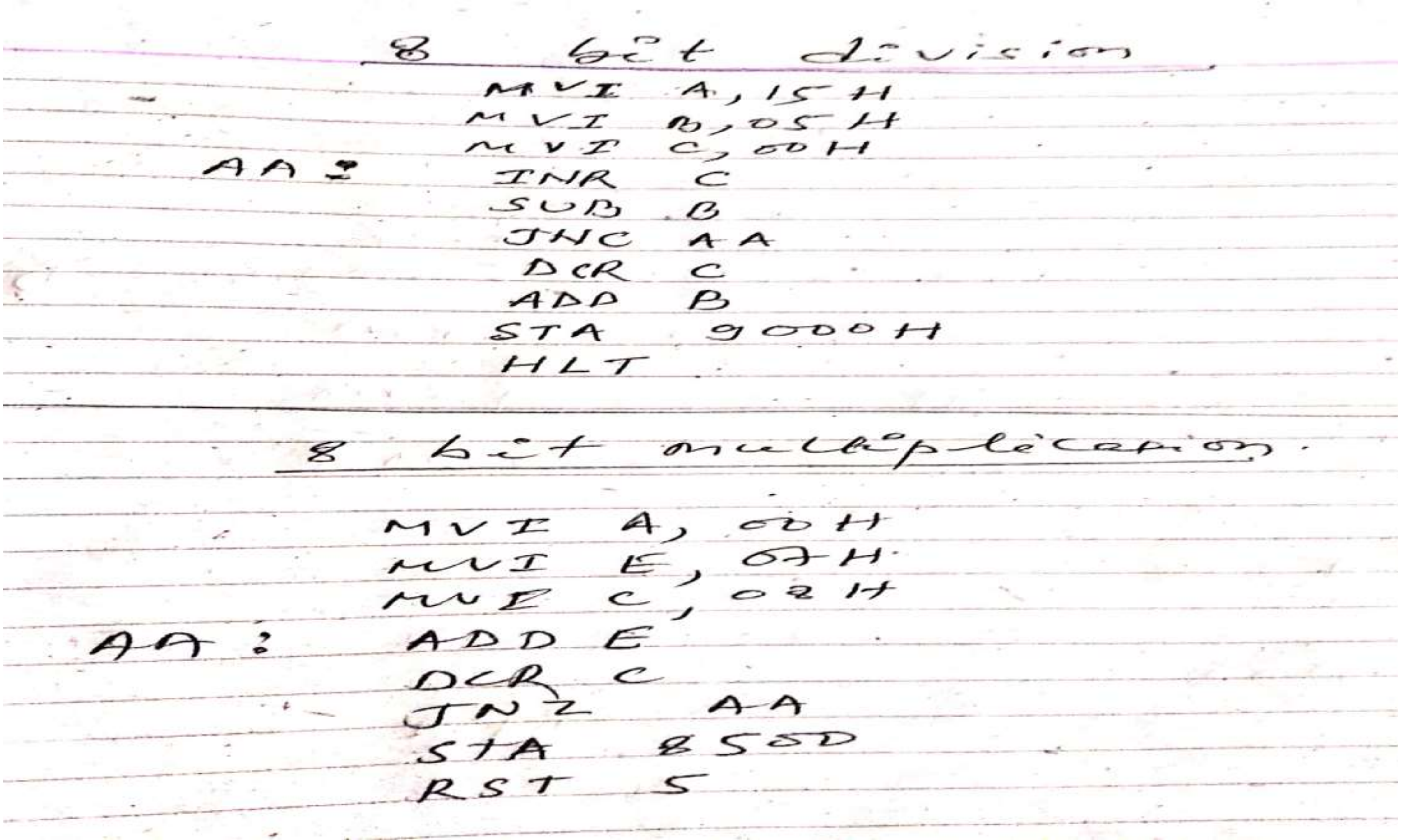
8 bit addition

```
LDA   9000 H
MOV   B, A
LDA   9001 H
ADD   B
STA   9002 H
HLT
```

8 bit addition

```
LXI H, 9000H
MOV A, M
INX  H
ADD M
STA   9500 H
HLT
```

Microprocessor Program



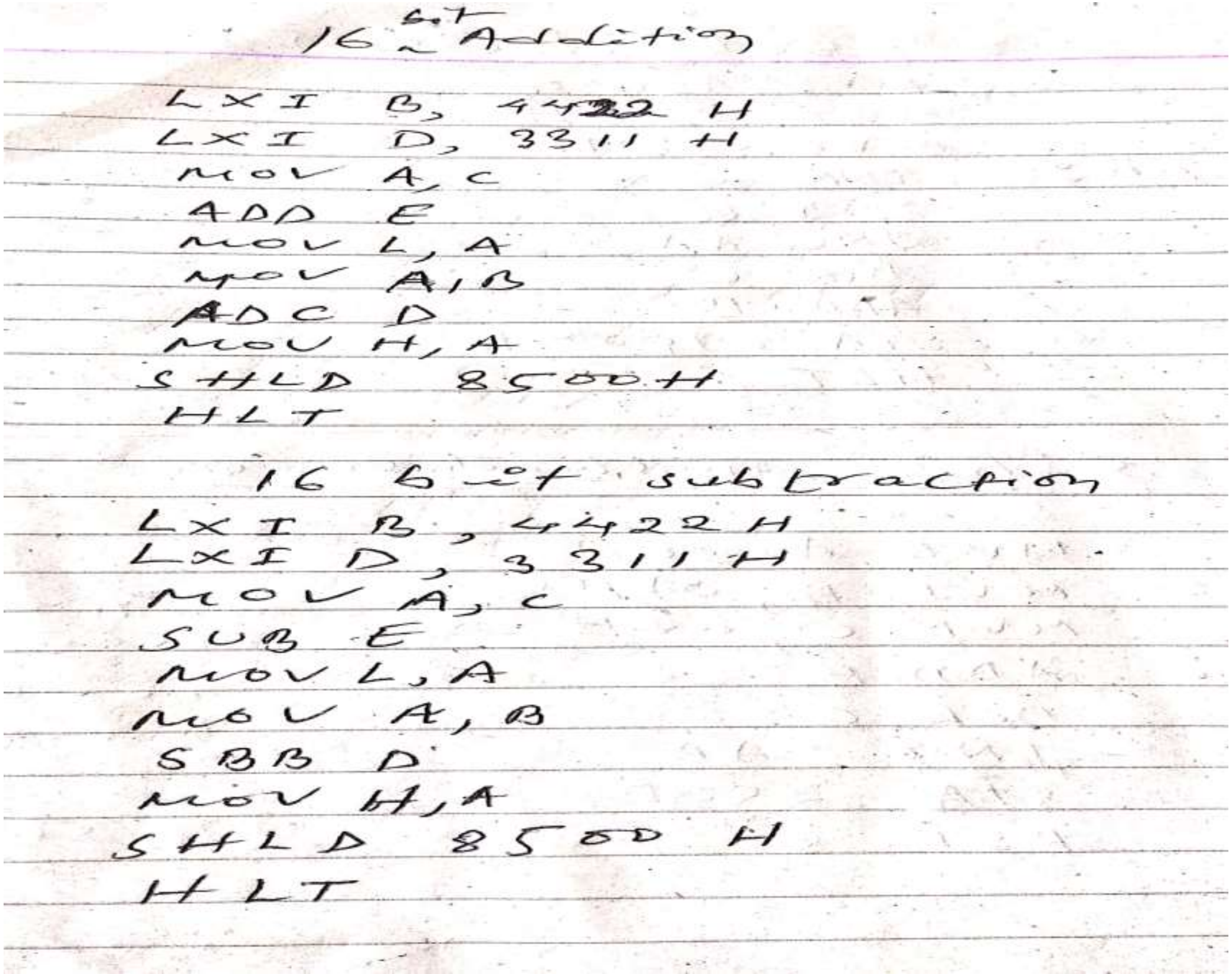
8 bit division

```
      MVI A,15H
      MVI B,05H
      MVI C,00H
AA:   INR C
      SUB B
      JNC AA
      DCR C
      ADD B
      STA 9000H
      HLT
```

8 bit multiplication.

```
      MVI A, 00H
      MVI E, 07H
      MVI C, 02H
AA:   ADD E
      DCR C
      JNZ AA
      STA 850D
      RST 5
```

Microprocessor Program



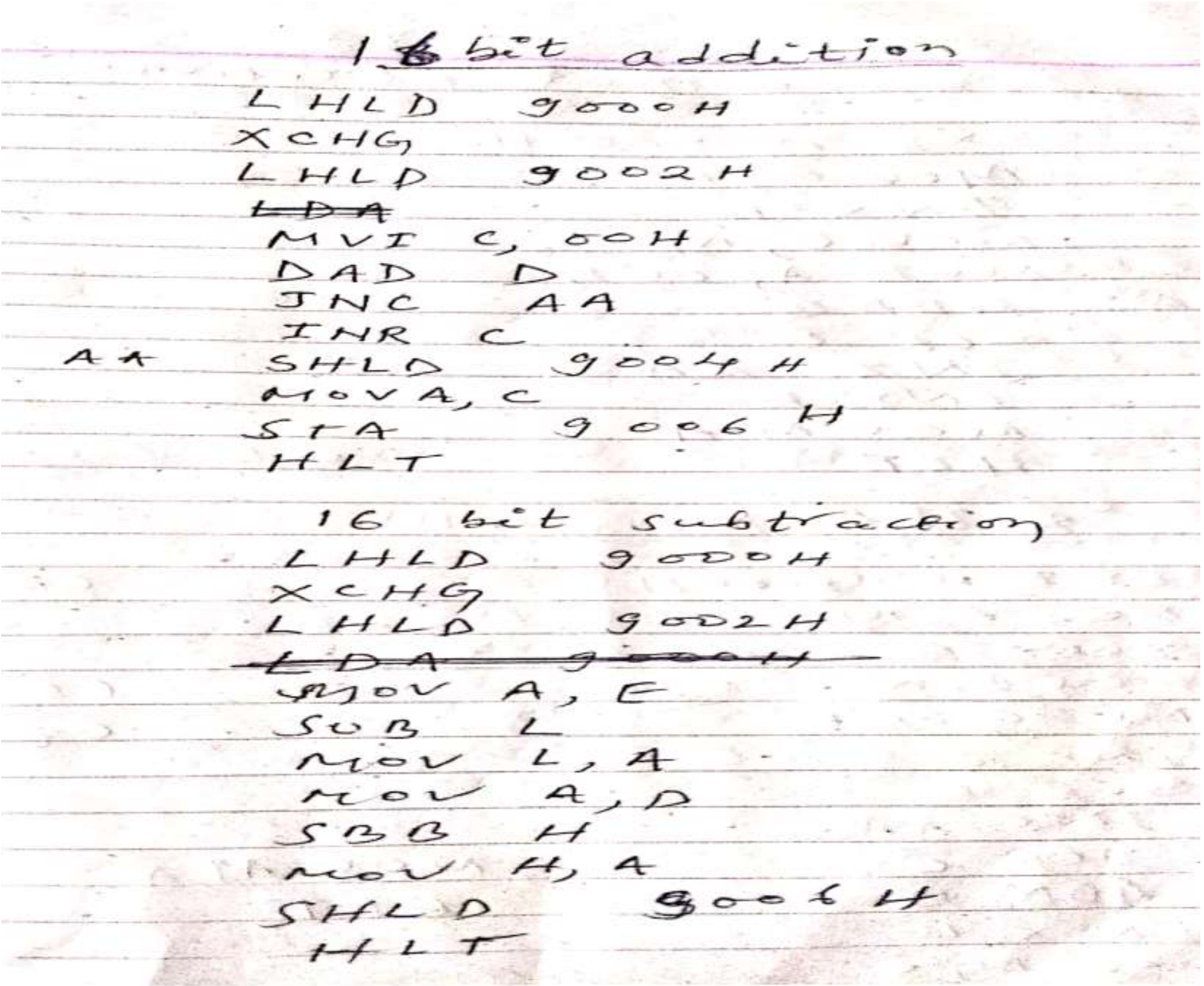
16 bit Addition

```
LXI B, 4422 H
LXI D, 3311 H
MOV A, C
ADD E
MOV L, A
MOV A, B
ADC D
MOV H, A
SHLD 8500H
HLT
```

16 bit subtraction

```
LXI B, 4422 H
LXI D, 3311 H
MOV A, C
SUB E
MOV L, A
MOV A, B
SBB D
MOV H, A
SHLD 8500 H
HLT
```

Microprocessor Program



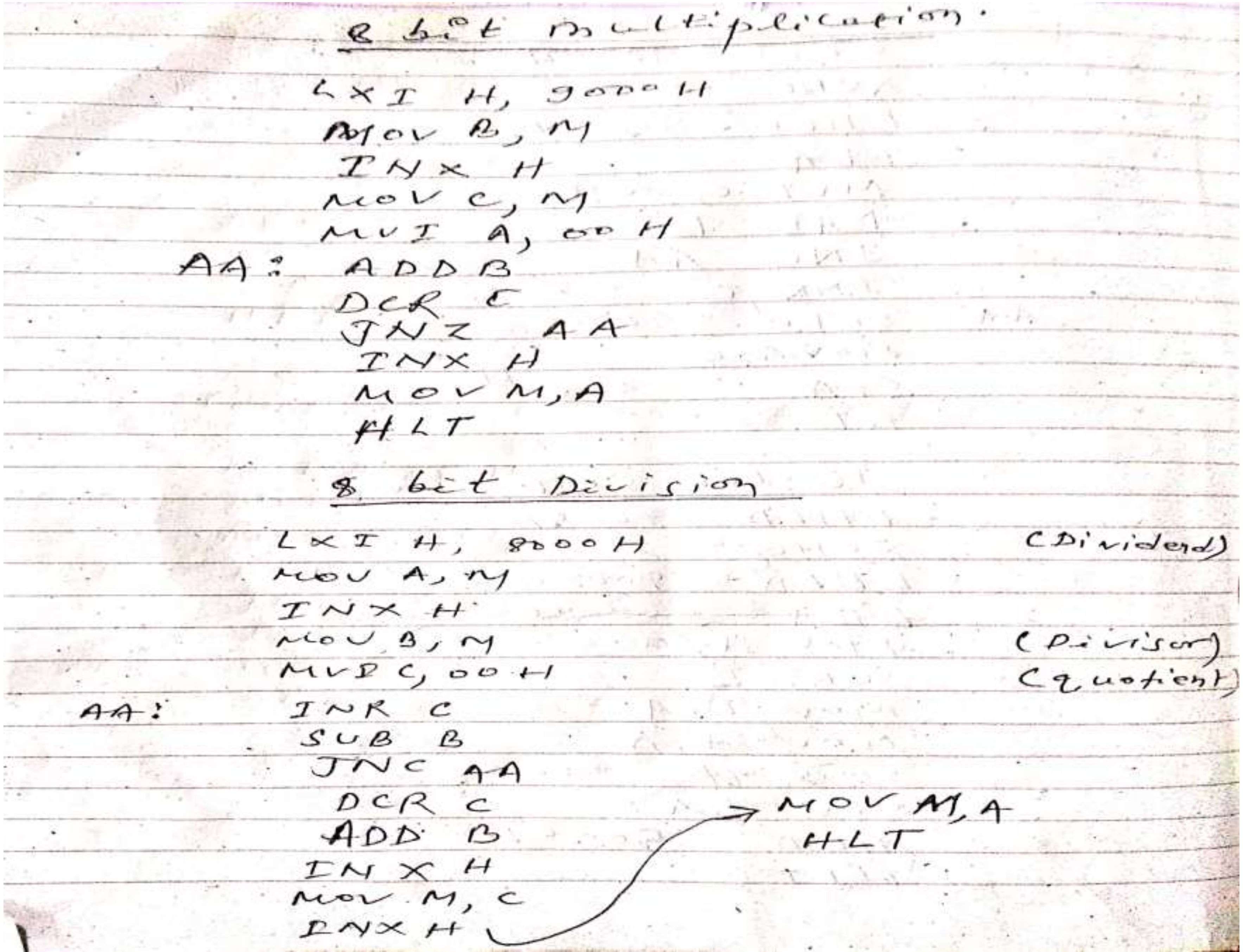
16 bit addition

```
      LHLD  9000H
      XCHG
      LHLD  9002H
      ~~LDA~~
      MVI  C, 00H
      DAD  D
      JNC  AA
      INR  C
AA    SHLD  9004 H
      MOV A, C
      STA  9006 H
      HLT
```

16 bit subtraction

```
      LHLD  9000H
      XCHG
      LHLD  9002H
      ~~LDA  9000H~~
      MOV  A, E
      SUB  L
      MOV  L, A
      MOV  A, D
      SBB  H
      MOV  H, A
      SHLD  9006 H
      HLT
```

Microprocessor Program



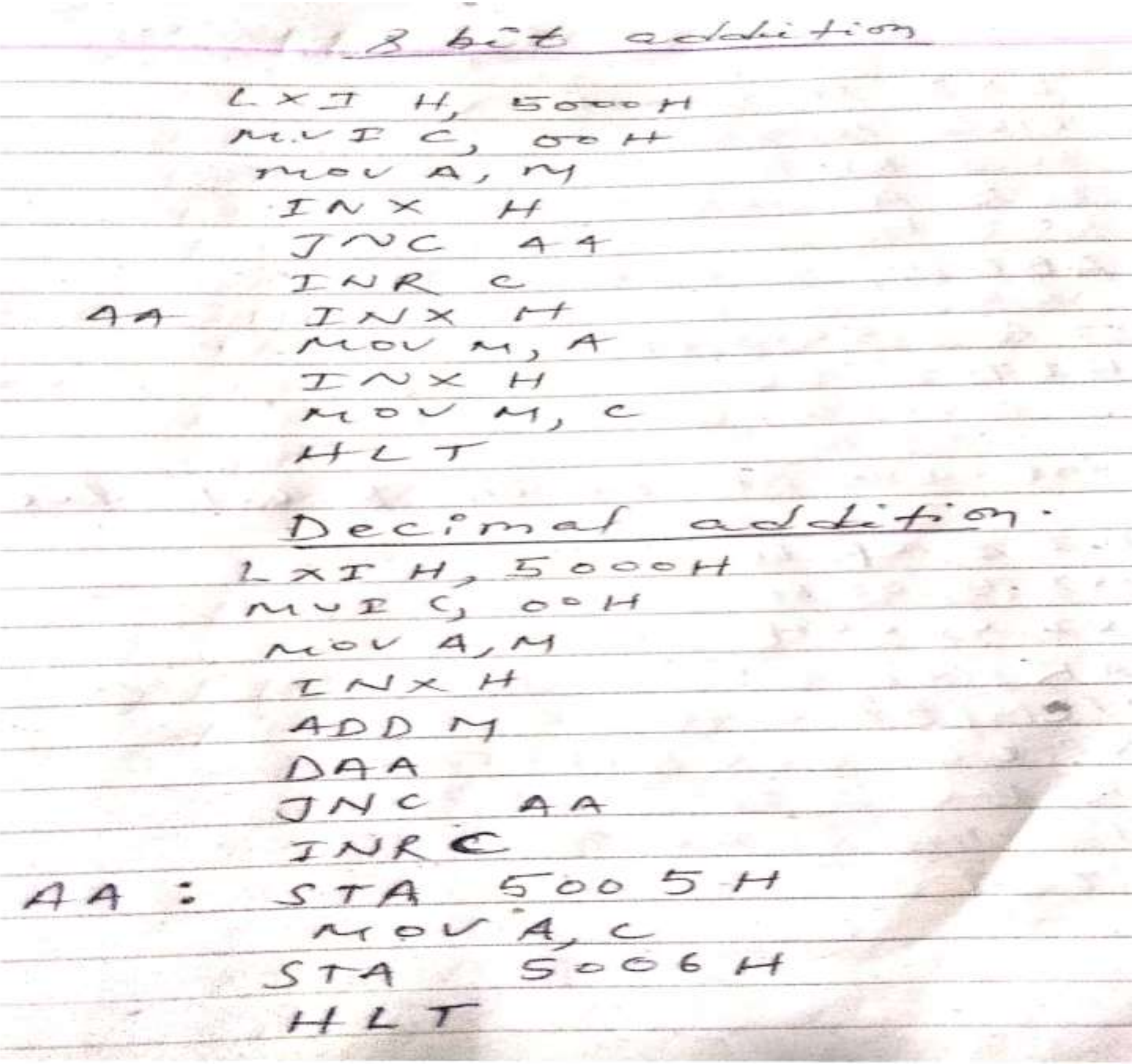
8 bit multiplication.

```
     LXI H, 9000 H
     MOV B, M
     INX H
     MOV C, M
     MVI A, 00 H
AA:  ADD B
     DCR C
     JNZ AA
     INX H
     MOV M,A
     HLT
```

8 bit Division

```
     LXI H, 8000 H          (Dividend)
     MOV A, M
     INX H
     MOV B, M               (Divisor)
     MVI C, 00 H            (quotient)
AA:  INR C
     SUB B
     JNC AA
     DCR C
     ADD B
     INX H
     MOV M, C
     INX H
     MOV M,A
     HLT
```

Microprocessor Program



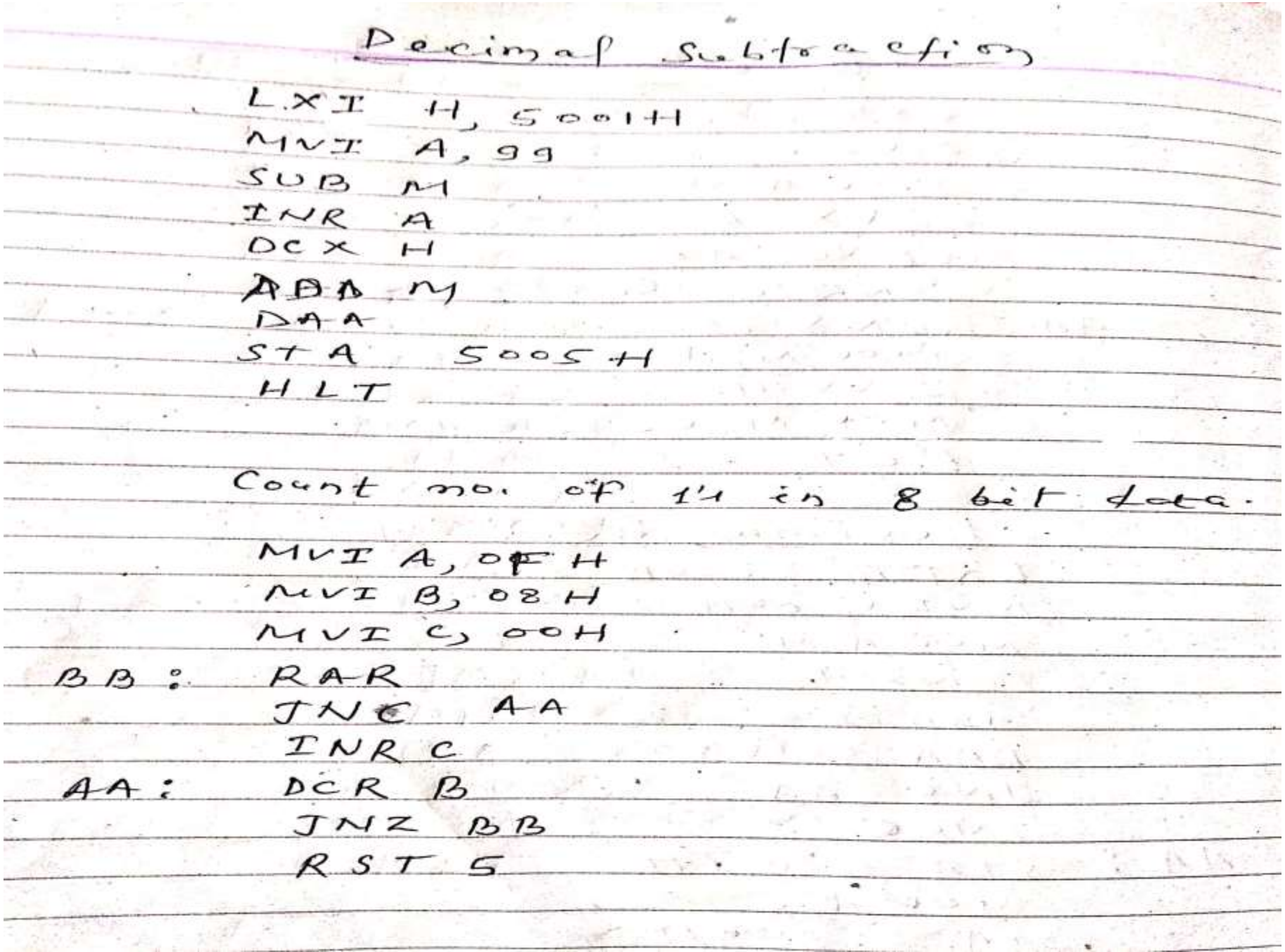
8 bit addition

```
      LXI H, 5000H
      MVI C, 00H
      MOV A, M
      INX H
      JNC AA
      INR C
AA    INX H
      MOV M, A
      INX H
      MOV M, C
      HLT
```

Decimal addition.

```
      LXI H, 5000H
      MVI C, 00H
      MOV A, M
      INX H
      ADD M
      DAA
      JNC AA
      INR C
AA :  STA 5005H
      MOV A, C
      STA 5006H
      HLT
```

Microprocessor Program



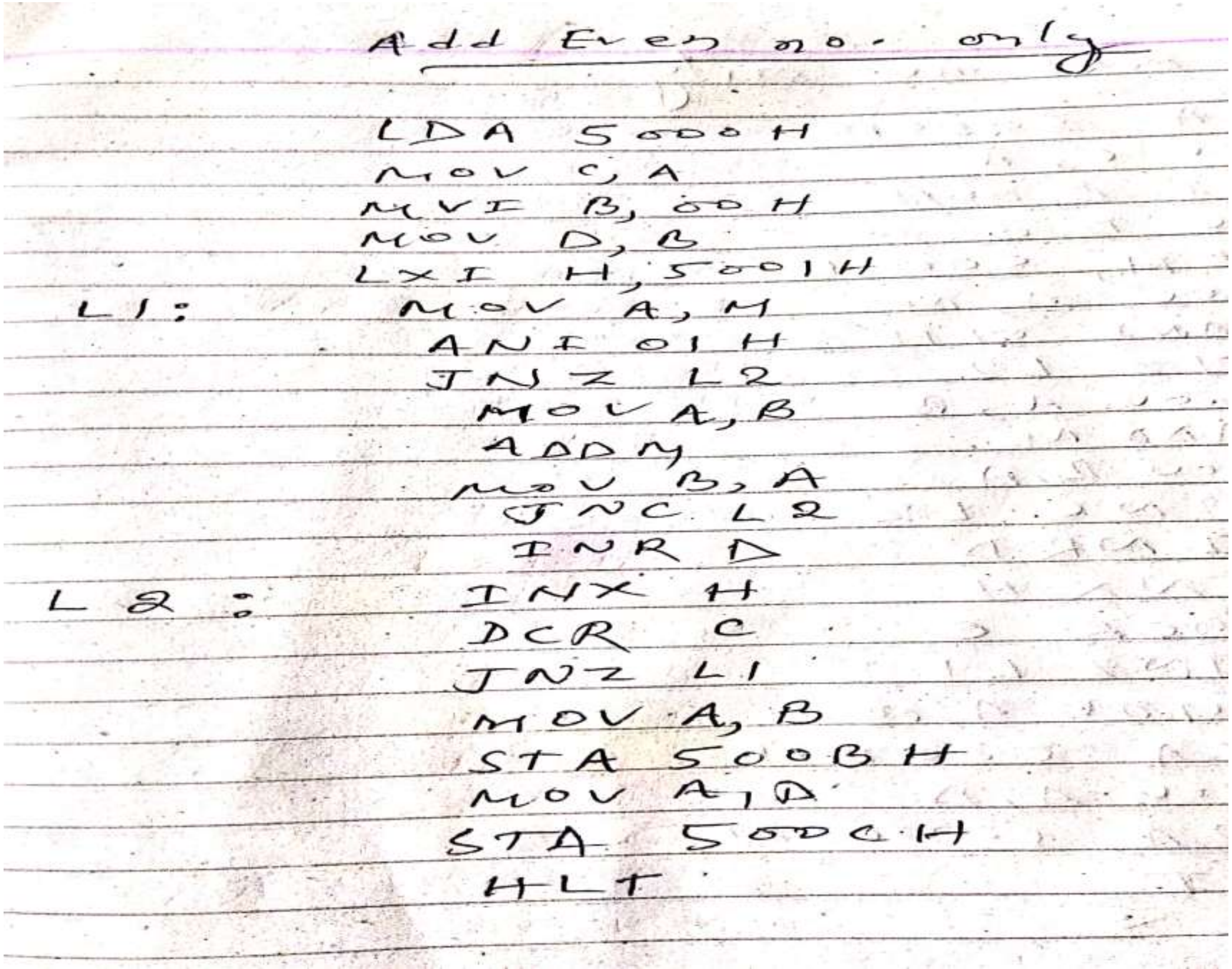
Decimal Subtraction

```
LXI  H, 5001H
MVI  A, 99
SUB  M
INR  A
DCX  H
ADD  M
DAA
STA  5005H
HLT
```

Count no. of 1's in 8 bit data.

```
     MVI A, 0FH
     MVI B, 08 H
     MVI C, 00H
BB:  RAR
     JNC  AA
     INR C
AA:  DCR B
     JNZ BB
     RST 5
```

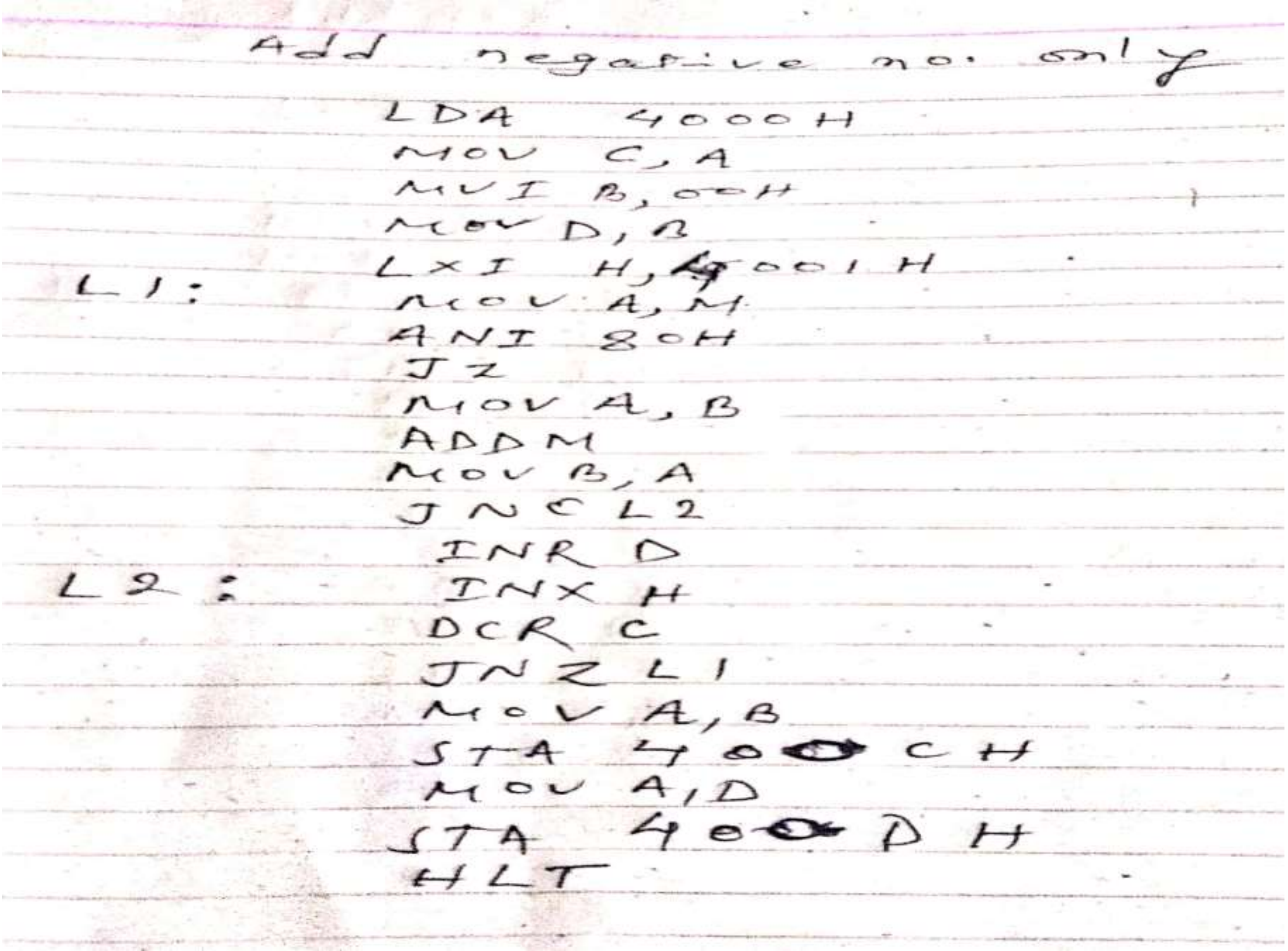
Microprocessor Program



Add Even no. only

```
        LDA 5000 H
        MOV C, A
        MVI B, 00 H
        MOV D, B
        LXI H, 5001H
L1:     MOV A, M
        ANI 01 H
        JNZ L2
        MOV A, B
        ADD M
        MOV B, A
        JNC L2
        INR D
L2:     INX H
        DCR C
        JNZ L1
        MOV A, B
        STA 500B H
        MOV A, D
        STA 500C H
        HLT
```

Microprocessor Program



Add negative no. only

```
        LDA   4000H
        MOV   C, A
        MVI   B, 00H
        MOV   D, B
        LXI   H, 4001H
L1:     MOV   A, M
        ANI   80H
        JZ
        MOV   A, B
        ADD   M
        MOV   B, A
        JNC   L2
        INR   D
L2:     INX   H
        DCR   C
        JNZ   L1
        MOV   A, B
        STA   400CH
        MOV   A, D
        STA   400DH
        HLT
```