1.multiplication

LDA 8500

MOV B, A

LDA 8501

MOV C, A

CPI 00

JZ LOOP

XRA A

LOOP1: ADD B

DCR C

JZ LOOP

JMP LOOP1

LOOP: STA 8502

RST 1

2.division

LDA 8501

MOV B, A

LDA 8500

MVI C,00

LOOP: CMP B

JC LOOP1

SUB B

INR C

JMP LOOP

LOOP1: STA 8502

MOV A, C

STA 8503

RST 1

3. 16 bit multiplication

LHLD 2050

SPHL

LHLD 2052

XCHG

LXI H,0000H

LXI B,0000H

AGAIN: DAD SP

JNC START

INX B

START: DCX D

MOV A,E

ORA D

JNZ AGAIN

SHLD 2054

MOV L,C

MOV H,B

SHLD 2056

HLT

4, 16 BIT SUBTRACTION

LHLD 2500

XCHG

LHLD 2502

MOV A, E

SUB L

MOV L, A

MOV A, D

SBB H

MOV H, A

SHLD 2504

HLT

5.factorial

LDA 2001

MOV B,A

MVI C,01H

MVI E,01H

LOOP: MOV D,C

MVI A,00H

LP: ADD E

DCR D

JNZ LP

MOV E,A

INR C

DCR B

JNZ LOOP

MOV A,E

STA 2010

HLT

6.largest number in array

LXI H,2050

MOV C,M

DCR C

INX H

MOV A,M

LOOP1: INX H

CMP M

JNC LOOP

MOV A,M

LOOP: DCR C

JNZ LOOP1

STA 2058

HLT

7.smallest number in array

LXI H,2050

MOV C,M

DCR C

INX H

MOV A,M

LOOP1: INX H

CMP M

JC LOOP

MOV A,M

LOOP: DCR C

JNZ LOOP1

STA 2058

HLT

8.ascending order

LOOP: LXI H,3500

MVI D,00

MVI C,05

LOOP1: MOV A,M

INX H

CMP M

JC LOOP2

MOV B,M

MOV M,A

DCX H

MOV M,B

INX H

MVI D,01

LOOP2: DCR C

JNZ LOOP1

MOV A,D

RRC

JC LOOP

HLT

9.descending order

LOOP: LXI H,3500

MVI D,00

MVI C,05

LOOP1: MOV A,M

INX H

CMP M

JNC LOOP2

MOV B,M

MOV M,A

DCX H

MOV M,B

INX H

MVI D,01

LOOP2: DCR C

JNZ LOOP1

MOV A,D

RRC

JC LOOP

HLT

10.greatest of two number

LDA 2050H

MOV B,A

LDA 2051H

CMP B

JNC STORE

MOV A,B

STORE: STA 2052H

HLT

11.smallest of two number

LDA 2050H

MOV B,A

LDA 2051H

CMP B

JNC STORE

STORE: MOV A,B

STA 2052H

HLT

12.lcm

LXI H, 8000H

MOV C, M

MVI B, 00H

INX H

MOV A, M

CMA

MOV E, A

MVI D, FFH

MOV A,B

CMA

MOV D,A

INX D

LXI H, 0000H

NEXT: DAD B

SHLD 8050H

LOOP: DAD D

JNC SKIP

MOV A, H

ORA L

JZ EXIT

JMP LOOP

SKIP: LHLD 8050H

JMP NEXT

EXIT: LHLD 8050H

HLT

13.gcd

LXI H,8000H

MOV A, M

INX H

MOV B, M

LOOP: CMP B

JZ STORE

JC EXG

SUB B

JMP LOOP

EXG: MOV C,B

MOV B, A

MOV A, C

JMP LOOP

STORE: STA 8050H

HLT

14.odd even

LDA 2050

ANI 01

JZ LOOP1

MVI A,11

JMP LOOP2

LOOP1: MVI A,22

LOOP2: STA 2051

HLT

15. Write an assembly language program to convert hexadecimal to Decimal(BCD)

LXI H,8000H

MVI D,00H

XRA A

MOV C, M

LOOP: ADI 01H

DAA

JNC SKIP

INR D

SKIP: DCR C

JNZ LOOP

MOV L, A

MOV H, D

SHLD 8050H

HLT

16. Write a program to convert Decimal to Hexadecimal number

LXI SP,80FFH

LXI H, 802BH

LXI B, 802CH

MOV A, M

CALL BCDBIN

STAX B

HLT

BCDBIN: PUSH B

MOV B, A

ANI 0FH

MOV C, A

MOV A, B

ANI 0F0H

RRC

RRC

RRC

RRC

MOV D, A

XRA A

MVI E, 0AH

SUM: ADD E

DCR D

JNZ SUM

ADD C

POP B

RET

17.