Q1. Write a program to get factorial of a number

```
MOV BL,05H
MOV AL,01H
BACK1:MUL BL
    DEC BL
    JNZ BACK1
    HLT
```

Q2. Write a program to add first five even number

```
MOV CL,05H
MOV BL,00H
MOV AL,00H
BACK1:ADD AL,BL
    INC BL
    INC BL
    DEC CL
    JNZ BACK1
    HLT
```

Q3. Write a program to add first odd even number

```
MOV CL,05H
MOV BL,01H
MOV AL,00H
BACK1:ADD AL,BL
    INC BL
    INC BL
    DEC CL
    JNZ BACK1
    HLT
```

Q4. Write a program to get average of five number

```
MOV [2000H],0AH
MOV [2001H],0AH
MOV [2002H],07H
MOV [2003H],03H
MOV [2004H],05H
MOV CL,05H
MOV BL,05H
MOV SI,2000H
MOV AL,00H
BACK1:MOV BH,[SI]
    ADD AL,BH
    INC SI
    DEC CL
    JNZ BACK1
    DIV BL
    HLT
```

Q5. Write a program to transfer 5 number saved at memory location [2000h,2001h,2002h,2003h,2004h] to another five location starting from 3000h.

```
MOV [2000H],01H
MOV [2001H],03H
MOV [2002H],05H
MOV [2003H],06H
MOV [2004H],09H
MOV CL,05H
MOV SI,2000H
MOV DI,3000H

MOV AL,00H
BACK1:MOV AL,[SI]
     MOV [DI],AL

     INC SI
     INC DI
     DEC CL
     JNZ BACK1
     HLT
```

6.pROGRAM FOR ACENDING ORDER

```
ORG 100H
MOV [2000H],01H
MOV [2001H],02H
MOV [2002H],04H
MOV [2003H],03H
MOV [2004H],05H
MOV SI,2000H
MOV DX,2001H
MOV CH,04H
BACK1:MOV CL,CH
     MOV DI,DX
BACK:MOV AL,[SI]
   MOV BL,[DI]
   CMP AL,BL
   JC  NXT
   MOV [SI],BL
   MOV [DI],AL
NXT:INC DI
   DEC CL
   JNZ BACK
   INC SI
   INC DX
   DEC CH
   JNZ BACK1
HLT
```

7.pROGRAM FOR DECENDING ORDER

```
ORG 100H
MOV [2000H],01H
```

```
MOV [2001H],02H
MOV [2002H],04H
MOV [2003H],03H
MOV [2004H],05H
MOV SI,2000H
MOV DX,2001H
MOV CH,04H
BACK1:MOV CL,CH
     MOV DI,DX
BACK:MOV AL,[SI]
   MOV BL,[DI]
   CMP AL,BL
   JNC  NXT
   MOV [SI],BL
   MOV [DI],AL
NXT:INC DI
   DEC CL
   JNZ BACK
   INC SI
   INC DX
   DEC CH
   JNZ BACK1
HLT
```

8. PROGRAM TO GET POSITIVE AND NEGATIVE NUMBER

```
MOV [2000H],02H
MOV [2001H],02H
MOV [2002H],90H
MOV [2003H],80H
MOV [2004H],82H
MOV BL,00H; POSITIVE NUMBER
MOV BH,00H;NEGATIVE NUMEBR
MOV CL,05H; COUNT-WE HAVE 5 NUMBER TO SCAN
MOV SI,2000H
LABEL2:MOV AL,[SI]
ROL AL,01H
JC  LABEL1
INC BL
JMP REPEAT
LABEL1:INC BH
REPEAT:INC SI
DEC CL
JNZ LABEL2
HLT
```

9.PROGRAM TO GET EVEN AND ODD NUMBER

```
MOV [2000H],02H
MOV [2001H],02H
MOV [2002H],90H
MOV [2003H],80H
MOV [2004H],82H
```

```
MOV BL,00H; STORE EVEN NUMBER
MOV BH,00H;STORE ODD NUMEBR
MOV CL,05H; COUNT-WE HAVE 5 NUMBER TO SCAN
MOV SI,2000H
LABEL2:MOV AL,[SI]
RCR AL,01H
JC  LABEL1
INC BL
JMP REPEAT
LABEL1:INC BH
REPEAT:INC SI
DEC CL
JNZ LABEL2
HLT
```

10.pROGRAM FOR getting largest number in array

```
ORG 100H
MOV [2000H],01H
MOV [2001H],02H
MOV [2002H],04H
MOV [2003H],03H
MOV [2004H],05H
MOV SI,2000H
MOV DX,2001H
MOV CH,04H
BACK1:MOV CL,CH
     MOV DI,DX
BACK:MOV AL,[SI]
   MOV BL,[DI]
   CMP AL,BL
   JNC  NXT
   MOV [SI],BL
   MOV [DI],AL
NXT:INC DI
   DEC CL
   JNZ BACK
```

11.To Develop an Assembly language Program to perform following Arithmetic operations on 8 bit and 16-bit data

Addition b) Subtraction c) Multiplication d) Division

8-bit addition

```
org 00h
MOV AL,05H
MOV BL,02H
ADD AL,BL
MOV [5000H],AL
```

(b) 8-bit subtraction

```
MOV AL,05H
MOV BL,02H
SUB AL,BL
```

MOV [5001H],AL
(c) 8-bit multiplication
MOV AL,05H
MOV BL,02H
MUL BL
MOV [5002H],AX
(d) 8-bit division

MOV AL,05H
MOV BL,02H
DIV BL
MOV [5004H],AX
HLT

1(B) 16 bit ARITHMETIC OPERATION(addition)

```
org 100h
                mov ax,1234h
                mov bx,5678h
                add ax,bx
                mov [5000h],ax
```

2.B 16 bit Subtraction

```
                mov ax,6375h
                mov bx,6005h
                sub ax,bx
                mov [5002h],ax
```

2.C 16 bit multiplication

```
                mov ax, 0502h
                mov bx,0102h
                mul bx
                mov [5004h],ax
                mov [5006h],dx
```

2.D 16-bit Division

```
                mov ax,0009h
                mov dx,0000h
                mov bx,0002h
                div bx
                mov [5008h],ax
                mov [500Ah],dx
                ret
```

12. Develop an Assembly language Program to perform following Logical operations on 8 bit and 16-bit data
a) AND b) OR c) NOT d) XOR
(i) AND 8BIT

```
ORG 100H
        MOV AX,0H
        MOV BX,0H
        MOV CX,0H
        MOV DX,0H
        MOV AL,0FFH
        MOV BL,0C5H
        AND AL,BL
        MOV [5000H], AL
        INT 03H
```

(II) OR-8BIT

```
   MOV AX,0H
        MOV BX,0H
        MOV CX,0H
        MOV DX,0H
        MOV AL,0FFH
        MOV BL,0C5H
        OR AL,BL
        MOV [5000H], AL

        INT 03H

   MOV AX,0H
        MOV BX,0H
        MOV CX,0H
        MOV DX,0H
        MOV AL,0FFH
        MOV BL,0C5H
        XOR AL,BL
        MOV [5000H], AL
```

(III) NOT -8BIT

```
ORG 100H
        MOV AX,0H
        MOV BX,0H
        MOV AL,0C5H
        NOT AL
        MOV [5000H],AL
        MOV BX,0FC65H
        NOT BX
        MOV [5001H],BX
        INT 03H
```