# ASSIGNMENT 1

(1) Store the data byte 32H into memory location 4000H   
   
(2) Exchange the contents of memory locations 2000H and 4000H   
   
(3) Add two 8-bit numbers: Add the contents of memory locations 4000H and 4001H and place the result in memory location 4002H.   
   
(4) Subtract two 8-bit numbers: Subtract the contents of memory location 4001H from the memory location 2000H and place the result in memory location 4002H.   
   
(5) Add the 16-bit number in memory locations 4000H and 4001H to the 16-bit number in memory locations 4002H and 4003H. The most significant eight bits of the two numbers to be added are in memory locations 4001H and 4003H. Store the result in memory locations 4004H and 4005H with the most significant byte in memory location 4005H.   
   
(6) Add contents of two memory locations: Add the contents of memory locations 4000H and 4001H and place the result in the memory locations 4002H and 4003H.   
   
(7) Write a program for one’s complement of 8 bit number.   
   
(8) Write a program for two’s complement of 8 bit number.

# ASSIGNMENT 2

(1)Subtract the 16-bit number in memory locations 4002H and 4003H from the 16-bit number in memory locations 4000H and 4001H. The most significant eight bits of the two numbers are in memory locations 4001H and 4003H. Store the result in memory locations 4004H and 4005H with the most significant byte in memory location 4005H.   
   
(2) Write a program using the ADI instruction to add the two hexadecimal numbers 3AH and 48H and store the result in memory location 2100H.   
   
(3) Write an assembly language program that AND, OR and XOR together the contents of register B, C and E and place the result into memory location 3000H, 3001H and 3002H.

(4) Program to Find 1’s Complement of 16-bit Number

(5) Program to Find 2’s Complement of 16-bit Number

# ASSIGNMENT 3

(1) Write a program to shift 8-bit no by three bits left. Assume data is in register C.

(2) Write a program to shift 8-bit data four bits right. Assume data is in register C.  
  
(3) Program to Find Sum of Series of 8-bit Numbers  
  
(4) Program to Multiply Two 8-bit Numbers  
  
(5) Largest of two 8-bit numbers.

# ASSIGNMENT 4

**1)** Write a program to load the data byte A8H in register C.Mask the high-order bits(D7-D4),

and display the low-order bits (D3-D0)at an output port.

**2)** Write a program to load the data byte 8EH in register D and F7H in register E.

Mask the high-order bits (D7-D4) from both the data bytes,

Exclusive-OR the low-order bits (D3-D0) and display the answer.

**3)** Write a program to load the bit pattern 91H in register B and 87H in register C.

Mask all the bits except D0 from registers B and C.

**4)** Write a program to clear the CY flag,to load number FFH in register B,and increment B.

If the CY flag is set ,display 01 at the output port,otherwise,display the contents of register B.

**5)** Write a program to mask lower bit of an 8 bit number.

**6)** Write a program Load two unsigned numbers in register B and register C,respectively.

Subtract C from B.If the result is in 2’s complement ,convert the result in absolute magnitude

and display it at PORT 1,otherwise ,display the positive result.Execute the program with the

following sets of data.

Set 1: B=42H,C = 69H  
  
 Set 2: B=69H,C = 42H  
  
 Set 3: B=F8H,C = 23H

# ASSIGNMENT 5

1. Write a program to check the 4th bit of 8-numbers stored from location 2000H. (2) Write a program to swap lower 4 bit nibble with upper 4 bit nibble of 8 bit data at memory location 2100H and place a result to location 2101H. (3) Write a Program to shift a 16-bit data 1 bit left. Assume data is in the HL register pair (4) Write a Program to calculate the factorial of a number between 0 to 8. (5) Write a program to Split 8 bit HEX data into two nibbles and store it in memory.

# ASSIGNMENT 6

(1) A string of readings is stored in memory, locations starting at 2070H, and the end of the string is indicated by the byte 0DH.Write a program to check each byte in the string, and the save the bytes in the range of 30H to 39H (both inclusive) in memory locations starting from 2090H.

(2) A set of ten bytes is stored in memory starting with the address 2050H.Write a program to chek each byte , and save the bytes that are higher than 6010   and lower than 10010in memory locations starting from 2060H.

(3) Data bytes are stored in memory locations rom 2050H to 205FH.To insert an additional five bytes of data,it is necessary to shift the data string by five memory locations. Write a program to store the data string from 2055H to 2064H.Use any sixteen bytes of data to verify your program.

# ASSIGNMENT 7

1. WAP to find Factorial of a given number using Call and Subroutine.

2. WAP for Fibonacci Series using Call and Subroutine.

3. WAP to find Multiplication of Two 8-Bit Numbers using Call and Subroutine.

# ASSIGNMENT 8

**1.** Write a program to convert a given number of binary data bytes into their BCD  
equivalents,and store them as unpacked BCDs in the output buffer.The number of data  
bytes is specified in register D in the main program.The converted numbers should be stored  
in groups of three consecutive memory locations.If the number is not large enough to  
occupy all three locations, Zeros should be loaded in those locations.  
**2.** A set of ten BCD readings is stored in the Input Buffer.Convert the numbers into binary and  
add the numbers.Store the sum in the Output Buffer,the sum can be larger than FFH.  
**3.** A set of ASCII Hex digits is stored in the Input Buffer memory.Write a program to convert  
these numbers into binary.Add these numbers in binary,and store the result in the Output-  
Buffer memory.

# ASSIGNMENT 9

(1) Write 8086 program to add and subtract two 8-bit numbers.

(2) Write 8086 program to add and subtract two 16 -bit numbers.

(3) Write 8086  Program to Multiply two 16 bit numbers.

(4) Write 8086  program to divide two numbers. (check for divide by 0 error)

(5) Write 8086 program to find LCM of two 8-bit numbers.

(6) Write 8086 program to find GCD of two 8-bit numbers

# ASSIGNMENT 10

(1) Write a program to add 'n' 16-bit numbers stored in concecutive memory location.

(2) Write a program to sub 'n' 16-bit numbers stored in concecutive memory location.

(3) Write a program to find smallest/largest number in a given array.

(4) Write a program to sort given numbers in ascending/descending order.

(5) WAP to reverse a given string.

(6) WAP to check a string is palindrome or not.

(7) WAP to merge two string entered through keyboard.