TWISTER

Date Page

Short programs

1) Program to add two numbers in Assembly language

Soln.

```
.model small
.data
a db 10
b db 20
c db ?
.code
        mov ax,@data
        mov ds,ax
        mov al,a
        add al,b
        mov c,al
        mov ah,4ch
        int 21h
        end
```

2) Program to add two numbers using direction

Soln.

```
.model small
.data
a dw 1234
b db 25
c dw ?
.code
        mov ax,@data
        mov ds,ax
        mov ax,a
        ~~add ax,bx~~
        mov bl,b
```

```
add abc, bbc
mov c, asc
mov ah, 4ch
int 21h
end
```

③ To multiply two numbers for dw directory

```
.model small
.data
a dw 2345h
b dw 4521h
c dw ?
d dw ?

.code
mov ax, @data
mov ds, ax
mov ax, a
mov bx, b
mul bx
mov c, ax
mov d, dx
mov ah, 4ch
int 21h
end
```

TWISTER

Date _____ Page _____

④ Program to multiply two numbers (for dB directory)

Sol:-

```
.model small
.data
a db 10h
b db 15h
c dw ?

.code
mov asc, @data
mov ds, asc
mov al, a
mov b
mov c, al
mov ah, 4ch
int 21h
end
```

⑥ Program to solve (a+b)-d.

Soln.

a = 2345
b = 4521
d = 1256

```
.model small
.data
a dw 2345h
b dw 4521h
d dw 1256h
c dw ?
x dw ?

.code
mov ax, @data
mov ds, ax
mov ax, a
mov bx, b
add bx, ax
mov ax, d
sub bx, ax
mov c, bx
mov ah, 4ch
int 21h
end
```

TWISTER

Date Page

⑥ To subtract two numbers ?

Soln.

```
.model small
.data
a db 30h.
b db 30h.
b db 25h.
c db ?.

.code
mov ax, @data.
mov ds, ax
mov al, a.
mov bl, b
mov al, bl
mov c, al
mov ah, 2h.
int 21h.
end
```

7) Program to solve
(a+b) * ((c+d) / (b+d)

a = 245
b = 25
c = 34
d = 50

Soln.
```
.model small
.data
a dw 245
b dw 25
c dw 34
d dw 50
r1 dw ?
r2 dw ?
r3 dw ?
quo db ?
rem db ?

.code
mov ax @data
mov ds ,ax
mov ax, a
mov bx , b
add ax , bx
mov r1 , ax

mov ax , c
mov bx , d
add ax , bx
mov r2 , ax
```

```
mov  ax, b
mov  bx, d.
add  ax, bx
mov  r3, ax

mov  ax, r1

mul  r2

div  r3

mov  quo, al
mov  rem, ah.
mov  ah, 4ch.
int  21h.
end.
```

Week-3

→ Swap the contents of two Arrays

Soln

```
.model small
.data
a db 10h, 20h, 30h, 40h, 50h
b db 11h, 22h, 33h, 44h, 55h
.code
mov ax, @data
mov ds, ax
lea si, a
lea di, b

mov cl, 05h
l1 : mov al, [si]
xch al, [di]
mov [si], al
inc si
inc di
loop l1

mov ah, 4ch
int 21h
end
```

TWISTER

Date Page

→ Demonstration of instruction of DAA

```
.Model small
.data
a db 63h
b db 38h

.Code
mov ax, @data
mov ds, ax
mov al, a
add al, b
daa
mov ah, 4ch
int 21h
end
```

→ Adding two large numbers.

```
.model small
.data
num1 db 00h, 03h, 42h, 98h.
num2 db 07h, 57h, 13h, 64h.
res db 4 dup (?)

.code
mov ax, @data.
mov ds, ax
mov si, 03h.
mov cl, 04h
clc
deci : mov al, num1[si]
adc al, num2[si]
daa
mov res[si], al
dec si
loop deci
mov ah, 4ch.
int 21h.
end.
```

TWISTER

Date _____ Page _____

→ Subtracting of two large numbers

```
.model small
.data
num1  db  00h, 03h, 42h, 98h
num2  db  07h, 57h, 13h, 64h
res   db  4 dup (?)

.code
mov  ax, @data
mov  ds, ax
mov  si, 03h
mov  cl, 04h
clr
dec : mov al, num1[si]
sbb  al, num2[si]
das
mov  res[si], al
dec  si
loop dec
mov  ah, 4ch
int  21h
end
```