TANISH MAJUMDAR

IT-A3-077 ASM ASSIGNMENT-1

Q1.) Write an Assembly Language Program to add two sixteen-bit numbers. The numbers are stored in DS: 0030H and DS: 0040H. Store the result in DS: 0050H, DS: 0051H,and DS: 0052H.

```
.model small
.stack 100h
.data
.code

main proc
mov ax,@data
mov ds,ax
mov ax,0000h
mov cl,05h
mov dl,00h
mov si,0030h

l1:
add ax,[si]
adc dl,00h
inc si
inc si
loop l1

mov si,0050h
mov [si],ax
inc si
inc si
mov [si],dl

int 03h
main endp
end main
```

Q2.) Write an Assembly Language Program to subtract an 8-bit numbers stored in DS: 0030H from a number stored in DS: 0040H

using 2's complement method. Store the result in DS: 0050H, and DS: 0051H.

```
.model small
.stack 100h
.data
.code
main proc
mov ax,@data
mov ds,ax
mov si,0030h
mov al,[si]
not al
inc al
mov si ,0040h
add al,[si]

jc L1
not al
inc al

L1:
mov si,0050h
mov [si],al
cmc
mov ah,00h
adc ah,ah
inc si
mov [si],ah


int 03h
main endp
end main
```

Q3.) Write a program to transfer a block of 8 data bytes from memory location DS: 0030H to DS: 0040H.

```
.model small
.stack 100h
.data
.code
main proc
mov ax,@data
mov ds,ax
mov es,ax
mov si,0030h
mov di,0040h
mov cx,0008h
cld
l1:movsb
loop l1

int 03h
main endp
end main
```

Q4.) Write an 8086 Assembly Language Program for the addition of 7 eight-bit numbers stored from DS: 0030H. Store the result in DS: 0050H and DS: 0051H.

```
.model small
.stack 100h

.data

.code

main proc
mov ax,@data
mov ds,ax
mov al,00h
mov ah,00h
mov cl,07h
mov si,0030h

l1:
add al,[si]
adc ah,00h
inc si
loop l1

mov si,0050h
mov [si],al
inc si
mov [si],ah

int 03h
main endp
end main
```

Q5.) Write an 8086 Assembly Language Program for the addition of 5 sixteen-bit numbers stored from DS: 0030H. Store the result in DS: 0050H, DS: 0051H, DS: 0052H.

```
..model small
.stack 100h

.data

.code

main proc
mov ax,@data
mov ds,ax
mov ax,0000h
mov bl,00h
mov cl,05h
mov si,0030h

l1:
add ax,[si]
adc bl,00h
inc si
inc si
loop l1

mov si,0050h
mov [si],ax
inc si
inc si
mov [si],bl

int 03h
main endp
end main
```

Q6.) Write an Assembly Language Program for the addition of five BCD numbers stored from DS: 0030H. Store the result in DS: 0040H and DS: 0041H.

```
.model small
.stack 100h

.data

.code

main proc
mov ax,@data
mov ds,ax
mov ax,0000h
mov cx,0005h
mov si,0030h

l1:
add al,[si]
daa
adc ah,00h
inc si
loop l1

mov si,0050h
mov [si],ax

int 03h
main endp
end main
```

Q7.) Write an Assembly Language Program to subtract a BCD number stored in DS:0040H from a BCD number stored in DS: 0050H. Store the result in DS: 0060H and DS: 0061H.

```
.model small
.stack 100h

.data

.code

main proc
mov ax,@data
mov ds,ax
mov ax,0000h


mov si,0040h
mov al,[si]
mov si,0050h
sub al,[si]
das
mov dl,00h
jnc l1

mov cl,al
mov al,99h
sub al,cl
add al,01h
daa
mov dl,01h

l1:
mov si,0060h
mov [si],al
inc si
mov [si],dl

int 03h
main endp
end main
```

Q8.) Write an Assembly Language Program to multiply two eight bit number stored in DS:0040H and DS: 0050H. Store the result from DS: 0060H.

```
.model small
.stack 100h

.data

.code

main proc
mov ax,@data
mov ds,ax
mov ax,0000h
mov bl,00h

mov si,0040h
mov al,[si]
mov si,0050h
mov bl,[si]
mul bl

mov si,0060h
mov [si],ax


int 03h
mov ah,4ch
int 21h
main endp
end main
```

Q9.) Write an Assembly Language Program to multiply two sixteen bit number stored in DS:0040H and DS:0050H. Store the result from DS: 0060H.

```
.model small
.stack 100h

.data

.code

main proc
mov ax,@data
mov ds,ax
mov ax,0000h
mov bx,0000h


mov si,0040h
mov ax,[si]
mov si,0050h
mov bx,[si]
mul bx

mov si,0060h
mov [si],ax
inc si
inc si
mov [si],dx


int 03h
mov ah,4ch
int 21h
main endp
end main
```

Q10.) Write an Assembly Language Program to divide 88H by 33H. Store the quotient in DS: 0060H and remainder in DS: 0061H.

```
.model small
.stack 100h

.data

.code

main proc
mov ax,@data
mov ds,ax
mov ax,0000h

mov al,88h
mov bl,33h
div bl

mov si,0060h
mov [si],ax

int 03h
mov ah,4ch
int 21h
main endp
end main
```

Q11.) Write an Assembly Language Program to divide 2222H by 55H. Store the quotient from DS: 0060H and remainder in DS: 0062H.

```
.model small
.stack 100h

.data

.code

main proc
mov ax,@data
mov ds,ax
mov dx,0000h

mov ax,2222h
mov bx,0055h
div bx

mov si,0060h
mov [si],ax
inc si
inc si
mov [si],dx


int 03h
mov ah,4ch
int 21h
main endp
end main
```