Chapter 7

Perform the following logic operations

(a) 10101111 AND 10001011

```
 10101111
 10001011
----------
 10001011 AND
```

Ans 10001011 b

(b) 10110001 OR 01001001

```
 10110001
 01001001
----------
 11111001 OR
```

Ans

(c) 01111100 XOR 11011010

```
 01111100
 11011010
----------
 10100110
```

Ans 10100110 b

(d) NOT 01011110

10100001b

2 Give logic instructions to do each of the following

(a) Clear the even-numbered bits of Ax, leaving the other bits unchanged

AND Ax, AAAAh

(b) Set the most end least significant bit of BL by leaving the bit unchangea

OR BL, 81h

(C) Complement the msb of Dx, leaving the other bits unchangea

XOR Dx, 8000h

(d) Replace the value of the word variable by one's complement

Not Word1

OR

XOR Word1, ffffh

Question 3 : Use the test instructions to do each of the following

(a) Set Zf is content of Ax is zero

TEST Ax, FFFh

(b) Clear Zf if bx contains an odd number

TEST Bx, 0001R

(c) Set zf if dx contain a -ve number

Test Dx, 800h

(d) Set Zf if Dx contains a zero or positive number

TEST Dx, 8000h

(e) Set Pf if BL contains an even number of 1 bits TEST BL, FFH

Q#04

(a) SHL AL, 1

AL = 10010110b = 96h

(b) SHR AL, 1

AL = 01100101b

= 65h

c ROL AL, CL if CL contains 2

(d) AL = 00101111 b

= 2fH

d ROL ALCL if CL contains 3

AL = 01111001b = 79h

e SAR ALCL if CL contains 2

(a) AL = 11110010b = f2h

f RCL AL, 1

AL = 10010111b = 97h

g RCR AL, CL if CL contains 3

(b) AL = 11111001b = f9h

Q#5

(a) Double the value of byte value of Bs

SHL B5, 1

(b) Multiply the value of Al by 8

MOV CL, 3

SHL AL, CL

(c) Divide 32142 by 4 and put quotient in Ax

MOV Ax, 32142

MOV CL, 2

SHR Ax, CL

(d) Divide -2145 by 16 output the quotient in Bx

MOV Bx, -2145
MOV CL, 4
SAR Bx, CL

Q NO #06

Write instructions do each of the following

(a) Assuming AL has a value less than 10 Convert it into decimal character

OR AL, 30h

(b) Assuming DL contains the ASCII code an upper case letter and convert into lower case

OR DL, 20h

Question No #07

→ Write instruction do each of the following

(a) Multiply the value of BL by 10d. Assume overflow does not occur

```
MOV DL, BL
MOV CL, 3
SHL BL, CL  ; BL = 8BL
SHL DL, 1   ; DL = 2BL
ADD BL, DL  ; BL = 8BL + 2BL
              10BL
```

b) Suppose AL contains a positive number Divide AL by 8 by and put the remainder in AH

```
MOV CL, 3
MOV AH, 0   ; empty AH
ROR AX, CL  ; remander in AH
```