

LAB 07 TASKS - 24K0025

Q1

```
INCLUDE Irvine32.inc

.data
    msgOn BYTE "Bit 0 is on ON" , 0dh , 0ah , 0
    msgOff BYTE "Bit 0 is on OFF" , 0dh , 0ah , 0

.code
main PROC
    mov al, 11110000b
    mov bl, 11001100b
    mov cl, 00110011b

    AND al, 10101010b

    OR al, 01010101b

    XOR al, 11111111b

    TEST al, 00000001b

    JZ bitIsOff

bitIsOn:
    mov edx, OFFSET msgOn
    call WriteString
    jmp quit

bitIsOff:
    mov edx, OFFSET msgOff
    call WriteString

quit:
    exit
main ENDP
END main
```

Q2

```
INCLUDE Irvine32.inc

.data
    p1 BYTE "Enter the 1st number: " ,0
    p2 BYTE "Enter the 2nd number: " ,0
    p3 BYTE "Enter the 3rd number: " ,0
    unsignedMsg BYTE "Largest Unsigned = " ,0
    signedMsg BYTE "Largest signed = " ,0

    num1 SWORD ?
    num2 SWORD ?
    num3 SWORD ?
```

```

.code
main PROC
    mov edx, OFFSET p1
    call WriteString
    call ReadInt
    mov num1 , eax

    mov edx, OFFSET p2
    call WriteString
    call ReadInt
    mov num2 , eax

    mov edx, OFFSET p3
    call WriteString
    call ReadInt
    mov num3 , eax

    call Crlf

    mov eax , num1

    cmp eax,num2
    jae CheckUnsignedNum3
    mov eax , num2

CheckUnsignedNum3:
    cmp eax,num3
    jae DisplayUnsigned
    mov eax , num3

DisplayUnsigned:
    mov edx, OFFSET unsignedMsg
    call WriteString
    call WriteDec
    call Crlf

    mov eax , num1

    cmp eax,num2
    jge CheckSignedNum3
    mov eax , num2

CheckSgnedNum3:
    cmp eax,num3
    jge DisplayUnsigned
    mov eax , num3

DisplayUnsigned:
    mov edx, OFFSET signedMsg
    call WriteString
    call WriteDec
    call Crlf

    exit
main ENDP
END main

```

Q3

```
INCLUDE Irvine32.inc

.data
    p BYTE "enter number (0 to stop) : ",0
    result BYTE "number of valid inputs : ",0

.code
main PROC
    mov ecx , 5
    mov esi , 1

inputLoop:
    mov edx, OFFSET p1
    call WriteString
    call ReadInt

    mov esi ,eax
    cmp eax ,0

    LOOPNZ inputLoop

    mov eax , 5
    sub eax , ecx

    cmp esi,0
    jne displayResult

    dec eax

displayResult:
    mov edx, OFFSET result
    call WriteString
    call WriteDec
    call Crlf

    exit
main ENDP
END main
```

Q4

```
INCLUDE Irvine32.inc

.data
    p BYTE "Enter two numbers: ",0
    msgTrue BYTE "Condition True", 0dh , 0ah ,0
    msgFalse BYTE "Condition False", 0dh , 0ah ,0
    a SDWORD ?
    b SDWORD ?

.code
main PROC
    mov edx, OFFSET prompt
    call WriteString
```

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    call ReadInt
    mov a , eax

    call ReadInt
    mov b , eax

    mov eax , a
    cmp eax ,b
    JLE condFalse

    cmp eax,100

    JGE condFalse

    mov edx , OFFSET msgTrue
    call WriteString
    JMP quit

condFalse:
    mov edx , OFFSET msgFalse
    call WriteString

quit:
    exit
main ENDP
END main

```

Q5

```

INCLUDE Irvine32.inc

.data
    resultMsg BYTE "Final Value of EAX : ",0
.code
main PROC
    mov eax , 10
    jmp Check

loop1:
    sub eax , 3

Check:
    cmp eax , 0
    jge loop1

end:
    mov edx , OFFSET resultMsg
    call WriteString
    call WriteInt
    call Crlf

    exit
main ENDP
END main

```