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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course:** |  | **Course Code:** |  |
| **Program:** | **BS(Computer Science)** | **Semester:** |  |
| **Duration:** | **60 Minutes** | **Total Marks:** |  |
| **Paper Date:** |  | **Page(s):** |  |
| **Section:** | **ALL** | **Section:** |  |
| **Exam:** | **Midterm Exam 1** | **Roll No:** |  |
| **Instruction/Notes:** | 1. Answer in the space provided 2. You can ask for rough sheets but **they will not be graded or marked** 3. In case of confusion or ambiguity make a reasonable assumption. 4. Questions are not allowed 5. This is open book and open notes paper  Good luck! | | |

Q1: (5 Points) rite a code for extended AND operation of n *word* numbers (i.e. n\*16 bit number) using loop. You can assume that n will be available in cx register. Write your code in space given in code snippet below.

[org 0x0100]

jmp Start

; data is defined here

**num1**: … ; assume that an n\*16 bit number is defined here

**num2**: … ; assume that an n\*16 bit number is defined here

**result**: … ; assume that an n\*16 bit number is defined here

**Start**:

mov cx, n; assume that n is a decimal number equal to the number of words in operands

; write a code to take and of num1 and num2 and store the result in result using a loop

; your code ends here

mov ax, 0x4c00

int 0x21

Q2 (5 points)

Translate the following flow chart to assembly language code. Write your code in given space

If (bx=0 or ax=5) and cx=10

Add 6 in ax

Add 5 in bx

;Write your code here

Q 3 (10 points) Given an array of 11 words, write a code to delete the even numbers from array. Example case is given below.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Array:** | **dw** | **10,** | **13,** | **96,** | **16,** | **18,** | **51,** | **88,** | **45,** | **2,** | **4,** | **3** |

After your code finishes executing **Array** should be as follow.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 13, | 51, | 45, | -1, | -1, | -1, |  | -1, | -1, | -1, | -1, |

Note that all the odd numbers are at start of **Array** in same order as were in given and even numbers are replaced by -1 and placed at the end of Array

NOTE::YOU CANNOT DECARE ANY OTHER ARRAY FOR WORKING

[org 0x0100]

jmp start

; data is defined here

**Array: dw 10, 13, 96,16,18, 51,88,45, 2, 4,3**

**start**:

; write a code here using a loop

; your code ends here

mov ax, 0x4c00

int 0x21