United International University (UIU)

Dept. of Computer Science & Engineering (CSE)

Mid-Term Exam. : : Trimester: *Summer* 2020

Course Code: CSE 1111/CSI 121, Course Title: Structured Programming Language (SPL)

Total Marks: 40 Duration: 1 hour

Answer ALL questions. **DO NOT** write the include header file, declaration of the main method, and unnecessary scanf function calls wherever possible to keep your answer short.

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1. (a) **Rewrite** the following conditional expression without using the logical AND (&&) operator. [5]

x > 5 && y <= 30.

(b) **Rewrite** the following code segment with a switch-case statement. [5]

```
if(n%100 != 0){
    printf("Not divisible\n");
}
else {
    printf("Divisible\n");
}
```

2. (a) What is "invalid index"? Show an example of "invalid index" for the following 'cgpa' array: float cgpa[100]; [3]

(b) Write a program to perform the following operations: [7]

(i) Declare an integer array of size 100, and name it "**arr1**".

(ii) Read an integer number from keyboard and store it in a variable named 'n'.

(iii) Read 'n' integer numbers from keyboard and store them in the array 'arr1'.

(iv) Declare another integer array of size 100, and name it "**arr2**".

(v) Store the square of each element in "arr1" in the corresponding element of "arr2".

(vi) Display the values in "arr2"

Input	Array 'arr1'	Array 'arr2'
n=3	10 5 20	100 25 400
n=4	10 4 20 4	100 16 400 16

3. (a) How many times the following for loop will execute? Briefly explain the reason. [3]

```
#include <stdio.h>
int main(){
    int i;
    for(i=1;i<=10;i++);
        printf("%d\n",i);
    return 0;
}
```

(b) Given integer **n**, write **code segment** that will print the **sum** of the following series up to n terms. [7]

1 - 2 + 3 – 4 + …..

4. (a) From the following declarations of 2D arrays, find the invalid declarations, and mention the reasons that made them invalid. [3]

I. int temp[2][2] = {1,2,3,4};

II. int temp[2][ ] = {1,2,3,4} ;

III. int temp[ ][2] = {1,2,3,4} ;

IV. int temp[ ][ ] = {1,2,3,4} ;

V. int temp[2][2] = {1,2,3,4,5,6,7,8};

(b) Write **code segment** to print the following pattern. [7]

12345
1234
123
12
1

[Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules.]