



**United International University (UIU)**  
**Dept. of Computer Science & Engineering (CSE)**

**Mid Term Exam:: Trimester: Fall 2020**

**Course Code: CSE 1111/CSI 121, Course Title: Structured Programming Language**  
**Total Marks: 20                      Duration: 1 hour**

There are FOUR Questions. Answer **all** the Questions. Marks are indicated in the right margin.

- 1 a) **Find the values** of the following variables, a, b, c, d, and e. For example, your [2.5]  
STUDENT ID is 011202029 and therefore, the value of  
LAST\_THREE\_DIGIT\_OF\_YOUR\_STUDENT\_ID is 029. **Use your own student ID.**

```
int a = LAST_THREE_DIGIT_OF_YOUR_STUDENT_ID % 5;  
int b = LAST_THREE_DIGIT_OF_YOUR_STUDENT_ID / 5;  
float c = LAST_THREE_DIGIT_OF_YOUR_STUDENT_ID / 5;  
float d = (float) LAST_THREE_DIGIT_OF_YOUR_STUDENT_ID / 5;  
float e = a * b - d / c;
```

- b) **Find output** from the given code segment for **each** of the values of **choice** [2.5]  
variable

- i) choice = LAST\_THREE\_DIGIT\_OF\_YOUR\_STUDENT\_ID
- ii) choice = LAST\_THREE\_DIGIT\_OF\_YOUR\_STUDENT\_ID + 11
- iii) choice = LAST\_THREE\_DIGIT\_OF\_YOUR\_STUDENT\_ID + 21

```
a = LAST_THREE_DIGIT_OF_YOUR_STUDENT_ID;  
b = a + 10;  
c = a + 20;  
printf("BEGIN\n");  
if ( choice < a )  
    printf("UIU\n");  
else if ( ( choice >= b ) && ( choice <= c ) )  
    printf("CSE\n");  
else  
    printf("NICE\n");  
printf("END");
```

- 2 a) Show the **manual tracing** for the following code segment [2.5]

```
a = LAST_TWO_DIGIT_OF_YOUR_STUDENT_ID % 2 + 3;  
b = LAST_TWO_DIGIT_OF_YOUR_STUDENT_ID % 2 + 2;  
c = LAST_TWO_DIGIT_OF_YOUR_STUDENT_ID % 2 + 4;
```

```
printf("START");  
switch( a + b - c ){  
    case 0:  
        printf("\n %d %d %d", a, b, c);  
        break;  
    case 1:  
        printf("\n %d %d %d", a*2, b*2, c*3);  
  
    case 3:  
        printf("\n %d %d %d", a+1, b+2, c+3);  
        break;
```

```

default:
    printf("\n %d %d %d", a-1, b-1, c-1);
}
printf("\nSTOP");

```

b) **Write a program** to perform the following operations [2.5]

- i) Assign integer variable **a** by the LAST\_THREE\_DIGIT OF YOUR STUDENT\_ID;
- ii) Assign integer variable **b** by the (LAST\_ONE\_DIGIT OF YOUR STUDENT\_ID+3);
- iii) Increase **a** by 1
- iv) Decrease **b** by 1
- v) If a is less than b, output will be "Division not possible"
- vi) If a is divisible by b, output will be a, b, quotient of a/b
- vii) If a is not divisible by b, output will be a, b, quotient and remainder of a/b

3 a) Show the **manual tracing** for the following code segment and find output [2.5]

```

int n = LAST_THREE_DIGIT OF YOUR STUDENT_ID;
int i = n-2;
int sum = 0;
while( i <= n ){
    sum = sum+i;
    printf("\n%d %d", i, sum);
    ++i;
}
printf("\n%d %d", i, sum);

```

b) **Write a program** that calculates the summation of the following series [2.5]

$a + (a+i) + (a+2i) + (a+3i) + \dots + (a+10i)$   
 Where  $a = \text{LAST\_THREE\_DIGIT OF YOUR STUDENT\_ID}$  and  $i = (\text{LAST\_ONE\_DIGIT OF YOUR STUDENT\_ID} + 2)$

4 a) Show the **manual tracing** for the following code segment and find output [2.5]

```

int A[4]={0};
int i;
a = LAST_TWO_DIGIT_OF_YOUR_STUDENT_ID+1;
b = LAST_TWO_DIGIT_OF_YOUR_STUDENT_ID+2;
c = LAST_TWO_DIGIT_OF_YOUR_STUDENT_ID+3;
d = LAST_TWO_DIGIT_OF_YOUR_STUDENT_ID+4;
A[0]=a;
A[1]=b;
A[2]=c;
A[3]=d;
for(i=3; i>=0; --i){
    if(A[i]%2 == 0)
        printf("A[%d]=%d\n", i, A[i]);
}

```

b) **Write a program** to perform the following operations [2.5]

- i) Declare a one-dimensional array A of size 10
- ii) Store the number a, (a+i), (a+2i), (a+3i), ... (a+9i) in the array A, Where  $a = \text{LAST\_THREE\_DIGIT OF YOUR STUDENT\_ID}$  and  $i = (\text{LAST\_ONE\_DIGIT OF YOUR STUDENT\_ID} + 2)$
- iii) Print the numbers in array A on the monitor in reverse order.

NOT initialize