COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

NCIS 215: OBJECT ORIENTED PROGRAMMING

END OF SECOND SEMESTER EXAMINATIONS

MAY 2021

LECTURER: MR TIMOTHY MAKAMBWA

TIME: 7 HOURS

INSTRUCTIONS

Start **each** question on a new page

Answer **ONE** question

Credit will be awarded for logical, systematic and neat presentations

All codes should be C# Programming Language

QUESTION ONE

a) Write a program to generate the Fibonacci series (The numbers that precedes the series are 0 and 1.The next number is found by adding up the two numbers before it.).0, 1, 1, 2, 3,…….
b) Write a program to display the factors of a given number [5]
c) Write a grogram to illustrate the trigonometry in Radians [5]
d) Write a program to illustrate the trigonometry in Degrees [5]
e) Write a program to generate random numbers [5]
f) Write a program to print all the multiples of 17 less 100 [5]
g) Write a program to print the sum of all multiples of 3 and 5 less than 100 [5]
h) Write program to find the sum of first 50 natural numbers using For Loop [5]
i) This C# Program Displays the ATM Transaction. Here the types of ATM transaction are
   1) Balance checking
   2) Cash withdrawal
   3) Cash deposition.
   You can opt any of the above transaction according to your need of transaction [15]
j) Write a program to calculate nPr (This C# Program Calculates nPr. Here there are n! (n factorial) permutations of n symbols. A r-permutation of n symbols is a permutation of r of them. There are n!/(n – r)! different r-permutations of n symbols. [10]
k) Write program to print a Diamond using nested Loop

```
    *
   ***
  *****
   ***
    *
```

[20]

l) Write a program Displays Numbers in the form of Triangle [20]

```
      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1
 1 5 10 10 5 1
1 6 15 20 15 6 1
```

QUESTION TWO

a) Write a C# Sharp program to find the sum of first 10 natural numbers.[5]
b) Write a program in C# Sharp to read 10 numbers from keyboard and find their sum and average. [5]
c) Write a program in C# Sharp to display the multiplication table vertically from 1 to n. [10]

Multiplication table from 1 to 12

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

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d) Write a program in C# Sharp to display the n terms of odd natural number and their sum like: 1 3 5 7 ... n [10]

e) Write a C# Sharp program to calculate the factorial of a given number.

f) Write a program in C# Sharp to find the sum of the series [1-X^2/2!+X^4/4!- .....]. [10]

g) Write a program in C# Sharp to display the n terms of harmonic series and their sum. The series is :1 + 1/2 + 1/3 + 1/4 + 1/5 ... 1/n terms [10]

h) Write a program in C# Sharp to display the sum of the series [9 + 99 + 999 + 9999 ...]. [10]

i) Write a program in C# Sharp to print the Floyd's Triangle. The Floyd's triangle is as below : [10]

```
1
01
101
0101
10101
```

j) Write a program in C# Sharp to display the sum of the series [1+x+x^2/2!+x^3/3!+....]. [10]

k) Write a C# Sharp Program to check whether a given number is an Armstrong number or not. eg 153= $1^3+5^3+3^3$ [10]

l) Write a program in C# Sharp to find LCM of any two numbers using HCF. [10]

QUESTION THREE

a) Write a program in C# Sharp which is a Menu-Driven Program to compute the area of the various geometrical shape. [15]

b) Write a program in C# Sharp which is a Menu-Driven Program to perform a simple calculation. [15]

c) Write a program in C# Sharp to make such a pattern like a pyramid with numbers increased by 1. The pattern is as follows : [15]

```
   1
  2 3
 4 5 6
7 8 9 10
```

d) Write a program in C# Sharp to display the sum of the series [9 + 99 + 999 + 9999 ...]. [10]

e) Write a C# Sharp Program to check whether a given number is perfect number or not. `( /*Perfect number is a positive number which sum of all positive divisors excluding that number is equal to that number. For example 6 is perfect number since divisor of 6 are 1, 2 and 3. Sum of its divisor is 1 + 2+ 3 = 6*/)` [10]

f) Write a C# Sharp program to find out the sum of in A.P. series. [15]
Test Data :
Input the starting number of the A.P. series: 1
Input the number of items for the A.P. series: 10
Input the common difference of A.P. series: 4
The Sum of the A.P. series are :
1 + 5 + 9 + 13 + 17 + 21 + 25 + 29 + 33 + 37 = 190

g) Write a program in C# Sharp to check whether a number is a palindrome or not.[10]

h) Write a program in C# Sharp to find the number and sum of all integer between 100 and 200 which are divisible by 9. [10]

END OF PAPER