NATIONAL SCHOOL OF BUSINESS MANAGEMENT

BSc in Management Information Systems (Special) (NSBM)–21.1
BSc (Honours) in Software Engineering (NSBM)– 21.1
BSc in (Honours) in Computer Networks (NSBM)–21.1
BSc (Honours) in Computer Science (NSBM)– 21.1
BSc (Honours) Software Engineering/Computer Science/Computer Networks/ Computer Security (Plymouth)– 21.1
BSc (Hons) Management Information Systems (UCD)– 21.1

Year 01 Semester 01 Examination
24th October 2021
CS102.3- Programming with C Language

Instructions to Candidates

1) Answer all questions.
2) **Time allocated for the examination is five (05) hours (Including downloading and uploading time)** . (Note: **No email submissions are accepted under any condition.)**
3) Weightage of Examination: 60% out of final grade
4) Provide answers to the selected questions in the given format under the question.
5) Please upload the document with answers (Answer Script) to the submission link before the submission link expires
6) Answer script should be uploaded in PDF Format
7) Under any circumstances E-mail submissions would not be taken into consideration for marking. Incomplete attempt would be counted as a MISSED ATTEMPT.
8) The Naming convention of the answer script – Module Code_Subject name_Index No
9) You must adhere to the online examination guidelines when submitting the answer script to N-Learn.
10) Your answers will be subjected to Turnitin similarity check, hence, direct copying and pasting from internet sources, friend's answers etc. will be penalized.

Question 1 (20 Marks)

a. Briefly explain the differences between *'Low Level vs. High-Level Language programming languages.'* **(5 marks)**

b. Briefly explain the differences between 'Variable' vs. 'Pointer.' You may write a few lines of code to explain the differences. **(5 marks).**

c. Why do we need Language translators in Computer Programming? Name and three translator types and briefly explain the purpose of each of the categories. **(5 marks)**

d. Write a C program to declare four variables, assign a value for each variable and display the variables with values. Note: It is not necessary to input values. **(5 marks)**

Question 2 (20 Marks)

a. Refer to the following comments in the C program and write the necessary code under the comment. **(10 marks)**

```
#include<stdio.h>

int main()

{

        //1. Declare integer variables x, y, z and assign the value 10 in the y and 20 in the z.

        //2. Increment the variables x, y by one and assign the sum in z.

        //3. Assign the difference of x, y in z and increment the variables x, y by one.

        //4. Increment the value x by one and assign the value in z.

        //5. Display the values of x, y, and z.

        return 0;

}
```

b. Write a C program (one program to display all the outputs) to input 20 numbers and display the following. **(10 marks)**

   I. Display your index number at the beginning and end of the programs.

   II. Display the average value.

   III. Display the total number of positives, negatives, and zeros.

Question 3 (20 Marks)

a. Using nested while and do-while loops, write two separate C programs to display the following output. **(10 Marks)**

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

b. By using the 'switch' selection structure, write a C program to perform the following tasks. When you run the program, the following menu is displayed to the user. Users can select the required basic arithmetic operation and display the output accordingly. **(10 marks)**

```
Enter two numbers ___ __
Enter the arithmetic operation (1-4) and 5 to exit __
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
```

Question 4 (20 Marks)

a. Create a function that accepts ***three integers as parameters*** and ***returns the highest value***. The main function must contain the following. **(10 marks)**

//Display your index number beginning and end of the program.

//Input three integers and call the function to display the highest value.

b. Create a function that accepts ***an integer as a parameter*** and ***displays the entered number as positive, negative, or a zero***. The main function must contain the following. **(10 marks)**

//Display your index number beginning and end of the program.

//Allow the user to input ten numbers and call the above function ten times to display the results.

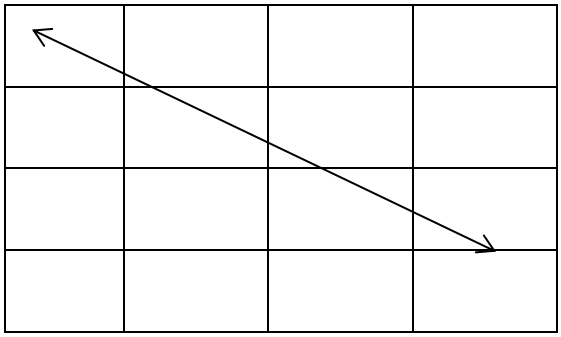
Question 5 (20 Marks)

a. Declare a single dimensional array to input and store the prices of 10 items. Display the prices of all the items, the highest price, and the lowest price.**(10 marks)**

b.

i. Declare a 4 x 4 multidimensional array, input the values, and display the values.

ii. Display the values as shown in the following diagonal.



(10 marks)

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