**Roll No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**NATIONAL UNIVERSITY OF MODERN LANGUAGES ISLAMABAD**

**DEPARTMENT OF SOFTWARE ENGINEERING**

**Final Term Examination – Spring 2021 – BSSE I B (Morning)**

**Subject: Programming Fundamentals Instructor: Waris Ali**

**Allowed Time: 02 Hours Total Marks: 30**

**Instructions: -**

1. Attempt all questions.
2. Overwriting / unnecessary details will be considered as incorrect answer.

**Q1**.  **10**

Write a program that take an array of size 10 and insert values of your choice. Add/insert all the element of array using a single pointer / array name and print sum don’t use array indices like [ ]. And then print the same array contents and their addresses in the reverse order using same pointer. Your program will also find the largest of array. Write separate functions for input, reverse and finding largest. Pass array as parameter in all the functions.

Note:

**Sample output of the program should be like this:**

Sum of elements of array are:\_\_\_\_\_\_\_\_\_\_\_

Reversed values of the array are:

Value of element 10 is: \_\_\_\_\_\_\_\_\_\_\_\_\_ and address is:\_\_\_\_\_\_\_\_\_\_\_\_

…….

Value of element1 is: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and address is:\_\_\_\_\_\_\_\_\_\_\_\_

Largest Element of array is:\_\_\_\_\_\_\_\_\_\_ and at index:\_\_\_\_\_\_\_\_\_\_\_\_\_

**Q2**. **10**  Write a program to calculate the cost of fencing and leveling the surface of circular piece of land whose radius is given as input by the user. Assume that cost for fencing one feet is 50 rupees while cost of leveling per square feet is 100 rupees. Your output should like sample output given below.

Write three functions for input, calculating the cost of fencing, and leveling the surface of circular piece of land.

Note: Use structure and functions and pass structures as parameters to functions.   
**Sample Output:**

\*\*\*\*\*Land Dimensions\*\*\*\*\*

Enter the radius in feet and inches: A B

\*\*\*\*\*Cost of Fencing and Leveling Land\*\*\*\*\*

Length of total fence: X feet Y inches

Cost of Fencing: ABC rupees

Area of circular land: M square feet and N square inches

Cost of leveling: XYZ rupees

**Q3**. 3+**3+2+2**

1. What are three different ways to use string in C++? Give maximum single line justification for each one.
2. What is function overloading? What are the advantages of function overloading?
3. Is it possible to compare pointers? If yes then give comparison types, in case of no. give valid justification.
4. How enumerated data types are different from structures?