

**LAB EXERCISE 3**  
**TOPIC: FUNCTIONS**

**NAME:**  
**MATRIC NO:**  
**SECTION:**

**QUESTION 1**

Describe the difference between predefined function and programmer-defined function?

**QUESTION 2**

Write a statement to calculate the equation or to convert the statement below using function from library.

- a) Square root of y.
- b) x to the power of y.
- c)  $\cos x$ .
- d) Change character to uppercase.
- e) Copy the string of x into string y.

**QUESTION 3**

What is the difference between local variable, global variable, global constant and static local variable?

#### **QUESTION 4**

Given the following coding, fill in the blank with the “terms” of function as a comment.

```
#include <iostream>
using namespace std;
int average(int, int, int); _____
int main()
{
    int x, y, z, avrg;
    cout << "Please enter three numbers:" << endl;
    cin >> x >> y >> z;
    avrg = average (x, y, z); _____
    cout << "The average of the given three numbers is: " <<
    avrg << endl;
    return 0;
}
int average(int a, int b, int c) _____
{
    int sum, avrg2;
    sum = a + b + c;
    avrg2 = sum / 3;
    return avrg2; _____
}
```

## **QUESTION 5**

Find the errors in the following given code.

```
#include <iostream>
using namespace std;
int average(int, int);
int power (float p);
int main()
{
    int x, y, z, avrg, powerOf;
    cout << "Please enter three numbers:" << endl;
    cin >> x >> y >> z;
    avrg = average ();
    cout << "The average of the given three numbers is: " << avrg
    << endl;
    power ();
    cout << "The average number to the power of two is: " << power
    () << endl;
    return 0;
}
int average(int a, int b, int c)
{
    int sum, avrg2;
    sum = a + b + c;
    avrg2 = sum / 3;
}
int power (int p)
{
    int pOf;
    pOf = pow(p,2);
    return 0;
}
```

### **QUESTION 6**

Write a C++ program to calculate a rectangle's area. The program consists of the following function:

- `getLength` – This function should ask the user to enter the rectangle's length, and then returns that value as a double
- `getWidth` – This function should ask the user to enter the rectangle's width, and then returns that value as a double.
- `getArea` – This function should accept the rectangle's length and width as arguments and return the rectangle's area.
- `displayData` – This function should accept the rectangle's length, width and area as arguments, and display them in an appropriate message on the screen.
- `main` – This function consists of calls to the above functions.

For Question 6, provide the answer in .cpp file.