

School of Computer Science and Engineering  
Winter Semester 2022-2023  
Continuous Assessment Test - 1

SLOT: G1

Programme Name & Branch : B.Tech.  
Course Name & code: Structured and Object-Oriented  
Programming (BCSE102L)  
Class Number (s): VL2022230505619  
Faculty Name (s): Prof. Sudarshan Nandy  
Exam Duration: 90 Min.  
Maximum Marks: 50

General instruction(s):

Specify if any printed material may be permitted  
Any other specific instruction

Q.No	Question	Max Marks	CO	BL
1.	<p>a) Analyzes the difference between static, extern, register, local, and global variables using a program as an example. (6)</p> <p>b) Write a C program that will use the ternary operator to find the prime numbers between 0 and 10. Also, write an explanation for the code and its possible output. (4)</p>	10	CO1	BL2
2.	<p>a) State the Difference in between gets() and fgets()? What is edit conversion code? Explain the working with a programming example. (5)</p> <p>b) Write a C program to print the main and opposite diagonal elements and sum of the diagonal elements if the matrix is a square matrix otherwise the program should print "NOT A SQUARE MATRIX". (5)</p>	10 10	CO1 CO1	BL2 BL2
3.	<p>a) Design a function qsolve() in your program that is used to provide a solution to the quadratic equation <math>ax^2+bx+c=0</math>. Your program will find two root values, which you need to store in such a way that they can be accessed from any function within the program's scope. Now, the eqsolve() functions</p>	10 10	CO2 CO2	BL3 BL3

return a value in a variable called "eqRet" to describe the solution type. The rules for returning different values are as follows:

- I. return value = 0 if the equation is inconsistent and there is no solution.
- II. return value = 2 if the equation has complex roots (not Real)
- III. return value = 3 if equation has distinct real roots.
- IV. return value = 4 if the equation has repeated real roots (6)

b) Analyzes the difference in between pass by value and pass by reference using an example. (4)

4. a) Write a C program to print the following pattern

```
1
12
1331
14641
```

Draw flowchart of this program. (5)

b) Write a C program to print any given string in a reverse order. For example if the input to a program is "this is a string" then the program will print "string a is this". (5)

5.

a) Justify the use of pointer for a simple addition program. Analyzes the relations and benefits of using pointer in an array. (1+3)

*Consider an array of different*  
b). Consider an array of different names in your program. Now design a Search() function and use pointer to search the user given name from the list. If the name is found then your program will print "NAME FOUND" and else the program will print "NAME NOT FOUND". (6)

10

CO2

BL4

10

CO2

BL2