



VIT[®]

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING CAT 1, Feb 2024

B. Tech - Winter Semester 2023_2024

Course Code: BCSE102L

Course Title: Structured and Object-Oriented Programming

Slot: Common to C2 Slot

Duration : 90 Minutes

Max. Marks: 50

Answer all the questions

- C programming enables you to read or write data in a certain format. Explain any two formatted input and output statement with examples.(5 marks)
 - Explain the methods with example for Interrupting Loop Flow in the context of C programming (5 marks)
- Explain if, if-else, nested if-else and cascaded if-else with examples and syntax. (10 marks)
- Write a c function `str_concat()` to concatenate two strings without using `strcat()` function available in `string.h` header (5 marks)
 - Write a program in C to find two elements whose sum is closest to zero. The given array is: 38 44 63 -51 -35 19 84 -69 4 -46. The Pair of elements whose sum is closest to zero is [44, -46] (5 marks)
- Write a C function that models the following mathematical function.
For example, $f(-3.2)$ returns $-3.2 + 2 = -1.2$. Assume that x is a float type variable.
$$f(x) = \begin{cases} x + 2, & x < -1 \\ x^2, & -1 \leq x \leq 1 \\ -x + 2, & x > 1 \end{cases}$$
(5 marks)
 - Write a Program to Generate the Fibonacci Series up to 'n' terms (0, 1, 1, 2, 3, 5, 8...up to 'n' terms) using recursion (5 marks)
- In a library management system auditing is a complex task for a librarian. The stock maintenance has manual entries that may have multiple entries of book access number. The library management system should be automated to remove duplicate book access number. Write a C program to remove duplicate numbers using pointer Note: Use functions and Pointers. (5 marks)
 - Elaborate in the context of C programming to return multiple value from function using pointers with examples. (5 marks)