

**BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)**  
**B. Tech. Sem - I COMPUTER SCIENCE & ENGINEERING : WINTER : 2023**  
**SUBJECT : PROGRAMMING & PROBLEM SOLVING**

Day : Tuesday

Time : 10:00 AM-01:00 PM

Date : 12/12/2023

**W-24022-2023**

Max. Marks : 60

**N.B.**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labelled diagrams **WHEREVER** necessary.

- Q.1 What is the need of an algorithm? Write an algorithm to check whether a number is odd or even. Also draw flowchart for the same. (10)
- OR**
- Q.1 Explain the concept of flowchart along with the notations used in it. Draw flowchart to read the price of an item in integer form and print it in decimal form. (10)
- Q.2 Discuss the following operators in C language with example: (10)
- i) Bitwise operators ii) Increment and decrement operators.
- OR**
- Q.2 a) Explain else-if ladder with the help of flowchart and program. (05)
- b) How does nested if-else works explain with an example? (05)
- Q.3 a) Illustrate multidimensional arrays with example program. (05)
- b) Write a C program to find the largest element given in an array of element. (05)
- OR**
- Q.3 Define an array. How to initialize one-dimensional array? Explain with suitable examples. Write a C program to sort the given array elements in ascending order. (10)
- Q.4 a) Define structure and write the general syntax for declaring and accessing members. (05)
- b) How to copy and compare structure variables? Illustrate with example. (05)
- OR**
- Q.4 What is the concept of structure in C programming? Write a C program that defines a structure employee containing the details such as empno, empname, department name and salary. The structure has to store 20 employees in an organization. Use the appropriate method to define the above details and define a function that will display the contents. (10)
- Q.5 What is a pointer? Write a C program using pointers to read list of integers and prints it in reverse order. (10)
- OR**
- Q.5 Explain the usage of \* and & operators. Write a program in C to add two numbers using pointers. (10)
- Q.6 Write a C program to find out number of vowels in a given file with suitable example. (10)
- OR**
- Q.6 a) List out the different modes of operation when the file is opened. (05)
- b) Define input and output operations of a file explain with an example. (05)

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