

**BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)**  
**Computer Science & Engineering**  
**B. Tech. Sem - I :SUMMER : 2023**  
**SUBJECT : PROGRAMMING & PROBLEM SOLVING**

Day : Tuesday

Time : 10:00 AM-01:00 PM

Date : 16-05-2023

S-24022-2023

Max. Marks : 60

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Assume suitable data if 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** What do you mean by pseudo-code? Write pseudo code for converting the decimal number into hexadecimal. Draw the flowchart for the same. [10]

**Q.2** Write short note on following: [10]  
a) Conditional control structure  
b) Unconditional control structure

**OR**

**Q.2** What do you mean by type conversion? With suitable code explain the use of relational operators. [10]

**Q.3** What is an array? Twenty-five numbers are entered from the keyboard into an array. Write a program to find out how many of them are positive, how many are negative, how many are even and how many odd. [10]

**OR**

**Q.3** What is multidimensional array? Discuss how initial values can be assigned to a multidimensional array. [10]

**Q.4** What is the concept of structure in C programming? Write a function to find the binary equivalent of a given decimal integer and display it. [10]

**OR**

**Q.4** Differentiate between the following with examples: [10]  
a) Actual and formal arguments      b) Global and local variables

**Q.5** Explain the concept of pointer in C. Write a function (using a pointer parameter) that reverses the elements of a given array. [10]

**OR**

**Q.5** How pointer can be initialized? What are the arithmetic operators that are permitted on pointers? [10]

**Q.6** Write program to copy contents of one file into another. When do we use the following functions: [10]

- a) free ( )      b) rewind ( )

**OR**

**Q.6** Write a program that compares two files and return 0 if they are equal and 1 if they are not. [10]

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