BCE-C102
SEMESTER EXAMINATION- DECEMBER 2023
CLASS: B.TECH SEMESTER: I
PROGRAMMING FOR PROBLEM SOLVING

Time: 3 hour   Max. Marks: 70

Note: Question Paper is divided into two sections: **A and B**. Attempt both the sections as per given instructions.

SECTION-A
(SHORT ANSWER TYPE QUESTIONS)

Instructions: Answer any *five* questions in about 150 words each. Each question carries six marks.

(5 X 6 = 30 Marks)

Question-1: What is the difference between while and do-while loop in C Language. Explain with example.

Question-2: Write a C program to input two numbers and compute all arithmetic operations.

Question-3: Explain different types of operators in C Language.

Question-4: Write a C program to find the reverse of a number.

Question-5: Explain about the different generation of computers.

Question-6: Explain about the features of C Programming Language.

Question-7: Write a C program to find the factorial of a number.

Question-8: Write a C program to check whether a number is Armstrong or not.

Question-9: What is recursion. Write a program in C to print the array elements using recursion.

Question-10: Explain different data types in C language. Also specify about the format specifier of each data type with their size.

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SECTION-B

(LONG ANSWER TYPE QUESTIONS)

Instructions: Answer any *four* questions in detail. Each question carries 10 marks.

(4 X 10 = 40 Marks)

Question-1: Write a C program to read and print an employee's detail using structures.

Question-2: Suppose a file contains student records with each record containing name and age of a student. Write a C program to read these records and display them.

Question-3: Write a C program:
    i)   to compare two strings,
    ii)   find the length of these two strings,

Question-4: Convert following number system to other number system:
    i) $(5062)_{10} = (?)_2$
    ii) $(159)_{10} = (?)_8$
    iii) $(11001011)_2 = (?)_{10}$
    iv) $(714)_8 = (?)_{10}$
    v) $(672)_8 = (?)_{16}$

Question-5: Write a program to addition of two matrix.

Question-6: Write a C program to print the Fibonacci series using recursion.

Question-7: Explain the difference between parameter passing mechanism call by value and call by reference.

Question-8: Write a C program using Switch-case:
    i)   to check whether an alphabet is vowel or consonant,
    ii)   to find maximum between two numbers.

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