Even End Term Back Examination 2024

Name of the Program: B. Tech.   Semester: 2nd
Name of the course: Programming for Problem Solving
Course Code: TCS201

Time: Three Hours   *Maximum Marks: 100*

Note:
  i.   This question paper contains five questions.
  ii. All questions are compulsory.
  iii. Instructions on how to attempt a question are mentioned against it.
  iv. Total marks assigned to each question are **twenty**.

Q1. Attempt any two questions of choice from a, b and c   **(10 x 2=20 Marks)**

   a. Write a C program to count no of vowels, consonants, digits and special characters in a string.

   b. Write a C program to compare two inputted strings using function.

   c. Explain at least 6 string manipulation functions with their syntax. Illustrate using example for each.

Q2. Attempt any two questions of choice from a, b and c   **(10 x 2=20 Marks)**

   a. Explain self-referential structure in C also explain typedef keyword and it's uses. Give suitable example.

   b. Write a program to store and print information of n students where information comprises of student's name, sno and marks in 4 subjects.

   c. How memory allocation is different for structure than memory allocation for union? Differentiate using an example. Explain different ways of structure initialization. Also explain three ways to access members of a structure.

Q3. Attempt any two questions of choice from a, b and c   **(10 x 2=20 Marks)**

    a. (i)Explain the working of getw and putw functions with syntax.   **5 Marks**

       (ii)Explain the working of getc and putc functions with syntax.   **5 Marks**

    b. Explain ftell, rewind, and Fseek available for random access to file.

    c. Write a program to copy the contents of a file to a new fresh file.

Q4.   **(10 x 2=20 Marks)**

    a. What are the key features of Python? What is the significance of Indentations in python? What is docstrings in python?

    b. What is the purpose of List, Tuple and Dictionary in python? Explain their syntax with examples?

    c. (i) Write a python program to find sum of following series

         1-3+5-7 upto n terms   **(5 Marks)**

      (ii) Write a python program to Find the largest number among the three input numbers. inputted number must be type casted to integers first.   **(5 Marks)**

Q5.   **(10 x 2=20 Marks)**

    a. Develop a python program to execute various operations on string literals such as length, upper, lower, replace. Also print the substring from string.

    b. Write short notes on following (give examples wherever needed)

       i.   Membership operator

      ii.   Identity operator

     iii.   Floor division and Exponentiation operator

     iv.   Role of indentation in python

    c. Write a python program to find sum of digits of any inputted number by user.