BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-I INFORMATION TECHNOLOGY : SUMMER : 2024
SUBJECT: STRUCTURED PROGRAMMING

Day : Wednesday
Date : 15/05/2024

S-27659-2024

Time : 10:00 AM-01:00 PM
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.
4) Use of non-programmable calculator is **ALLOWED**.
5) Assume suitable data, if necessary.

Q. 1 Briefly explain each stage of the problem solving model and give an example of how each stage contributes to finding a solution. **(10)**

OR

Q. 1 Define a flowchart, pseudocode and their role in algorithm design. Discuss the strengths and weakness of each of these tools. **(10)**

Q. 2 Explain the importance of choosing the appropriate data type for a variable. How can incorrect data type selection lead to problems in your program? **(10)**

OR

Q. 2 Explain the key difference between syntax errors and sematic errors. Provide an example of each type of error in C code to illustrate the distinction. **(10)**

Q. 3 Elaborate on two commonly used conditional statements in C with suitable example. **(10)**

OR

Q. 3 What is a pointer in C programming? How does it differ from a regular variable? Explain the concept of memory addresses and how pointers store these addresses. **(10)**

Q. 4 Write a program that demonstrates the use of both call by value and call by reference mechanisms when passing parameters to functions. **(10)**

OR

Q. 4 Compare and contrast recursive functions with iterative approaches, highlighting situations where recursion is preferred. **(10)**

Q. 5 Write user defined function to check the substring and find length of strings. **(10)**

OR

Q. 5 Define strings in the context of C programming and explain how they are represented as arrays of characters. Discuss the importance of standard string library functions in simplifying string manipulation tasks. **(10)**

Q. 6 Explain the concept of self – referential structures and provide a practical example illustrating their usage. **(10)**

OR

Q. 6 Develop a program that calculate the sum of integers passed as command-line arguments. The program should accept any number of integers as arguments and display their sum. **(10)**

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