

Reg.No

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SNS COLLEGE OF TECHNOLOGY

(Autonomous)

B

Internal Assessment – I (April 2024)

Academic Year 2023-2024(ODD) / Second Semester

23ITT101 – PROGRAMMING IN C & DATA STRUCTURES

Common to Aero, Auto, Agri, Mech, FT, MCT, Civil

Time: 1^{1/2} Hours

Maximum Marks: 50

Answer All Questions

PART - A (5 x 2 = 10 Marks)

- | | | CO | BL |
|---|--|-----|-----|
| 1 | Infer what an algorithm is and give an example | CO1 | Rem |
| 2 | Write a simple Psuedocode to find the factorial of a number | CO1 | App |
| 3 | Develop a flowchart for a program that calculates the area of a circle | CO1 | Cre |
| 4 | Illustrate decision making statements with examples | CO2 | Und |
| 5 | Compare and contrast the difference between if statement & switch statement in C Programming | CO2 | App |

PART - B (2 x 13 + 1 x 14 = 40Marks)

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|---|---|-----|-----|
| 6 | (a) Sketch the structure of a C program, including its main components and their functions with a sample diagram and program.
(Or) | CO1 | App |
| | (b) Design a C program that uses variables, constants, and operators to calculate and display the area of various geometric shapes (e.g., circle, rectangle, triangle) based on user input. | CO1 | App |
| 7 | (a) Design an algorithm that takes a user's input (age) and determines their eligibility for various services based on predefined age ranges. Use appropriate decision-making constructs and provide a flowchart to illustrate the logic.
(Or) | CO2 | Ana |
| | (b) Compare and contrast the use of different loop structures (for, while, do-while) in various scenarios. Discuss their advantages and limitations, and provide examples to support your arguments. | CO2 | Ana |
| 8 | (a) Analyze a given C program that utilizes various data types, variables, constants, and operators. Identify and explain the purpose of each data type used in the program.
(Or) | CO1 | Ana |
| | (b) Implement a menu-driven calculator program that allows users to perform basic arithmetic operations on two numbers | CO2 | Ana |

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