Roll No. ……. **Total Pages: _ _**

Paper ID: SCS001 **Course Code:** M**SCS-1-01T**

Examination (January - 2024)

Master of Computer Science (M.Sc)

Semester - I

Computer Programming

Time Allowed: 3 Hours **Max. Marks: 70**

Instructions for the Students

1. Attempt any 2 questions out of 4 from Section – A (Each question carries 10 marks)
2. Attempt any 2 questions out of 4 from Section – B (Each question carries 10 marks)
3. Attempt any 10 questions out of 15 from Section – C (Each question carries 03 marks)

Section - A **2*10=20**

Q1. Discuss input and output statements in C. Illustrate examples of how these statements are used to interact with users and display information.

Q2. What are case control statements in C. Discuss in detail with their syntax and example.

Q3. Compare and contrast arrays and pointers in C. Discuss their similarities, differences, and situations where one is preferred over the other. Provide examples wherever possible.

Q4. Discuss the evolution of the C programming language. Define and elaborate on the character set used in the C programming language. Differentiate between Tokens and Keywords.

Section - B **2*10=20**

Q5. Explain the concept of recursive functions in C. Write a program to find factorial of a number using recursion. Explain each step of the program in detail.

Q6. Explain the process of declaring and initializing structures in C. Discuss different methods of accessing structure data members in C. Discuss examples to demonstrate the use of the dot operator and arrow operator for accessing individual members.

Q7. Explain access specifiers in C++. Discuss their role, with examples, in controlling the visibility and accessibility of class members. What is Dynamic Binding and Message Passing.

Q8. Discuss different modes of inheritance with example.

Section - C **10*3=30**

Q9. Short Answer Questions (Attempt any 10 questions)

a) Briefly describe the concept of constants in C.
b) Discuss relational operators in C and their role in decision-making.
c) Write a C program to check whether a given number is even or odd.
d) Write a C program to find largest number in an array.
e) Write a C program to read n number of values in an array and display them in reverse order.
f) Write a C program to check whether the entered number is a prime number or not.
g) Explain the difference between Structure and Union.
h) Discuss the importance of following naming conventions for variables in C.
i) Explain the comma operator in C with syntax and use case.
j) Differentiate between object-oriented programming and C.
k) Explain the concept of destructors with example in C++.
l) Explain the purpose of a copy constructor in C++.
m) Explain the switch statement in C.
n) Discuss assignment operators in C with example.
o) Explain with examples the basic data types in C.