

Roll No.

Total No. of Questions : 09

Total No. of Pages : 02

**B.Tech. (AI & ML/Block Chain/CE/CSE/CS/DS/CSD/EE/ECE/EEE/  
E&TE/IT/ME/Robotics & Artificial Intelligence/Internet of Things and  
Cyber Security including Block Chain Technology) (Sem.-1,2)**

**PROGRAMMING FOR PROBLEM SOLVING**

**Subject Code : BTPS101/18**

**M.Code : 93803**

**Date of Examination : 22-05-2024**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION - B & C** have **FOUR** questions each.
3. **Attempt any FIVE** questions from **SECTION B & C** carrying **EIGHT** marks each.
4. **Select atleast TWO** questions from **SECTION - B & C**.

**SECTION-A**

**1. Write short notes on :**

- a. Explain the process of compiling a C program.
- b. Design a flow chart to find the sum of first n natural numbers.
- c. What do you mean by operator precedence?
- d. Explain the use of if-else if statement with the help of an example.
- e. What is a string? How can we create a string in C language?
- f. Explain Big (O) notation.
- g. Define pointer. Write the syntax to create a pointer.
- h. What is structure? Write the syntax to create a structure.
- i. What is a user-defined function? How to declare prototype a user-defined function?
- j. What are bitwise operators?

## SECTION-B

2. Explain in detail various components of computer system.
3. List various symbols used in flowchart. Draw a flowchart to find the sum of all numbers from 1 to n.
4. Write a program to implement selection sort.
5. Explain in detail various data types used in C Programming.

## SECTION-C

6. What is recursion? Write a program to find the factorial of a number using recursion.
7. What is a pointer? Write a program to find the sum of all elements of an array using pointers.
8. Discuss the use of user-defined functions in C. Explain the difference between various methods of passing arguments to a function.
9. Differentiate between :
  - a. Array and Structure.
  - b. Algorithm and Flowchart.

**NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.**